TABLE 5-2
Detailed Evaluation of Remedial Alternatives
Forest Street Site
Jacksonville Ash Feasibility Study, Revision 1

Alternative: Criterion	Alternative 1- No Further Action	Alternative 2- Soil Cover with Excavation and Offsite Disposal	Alternative 3- Shallow Excavation, Offsite Disposal, and Soil Cover	Alternative 4- Deep Excavation and Offsite Disposal
(b) Adequacy and reliability of controls	• Not applicable	• Administrative restrictions are expected to be effective in minimizing the potential for surface spreading of soil excavated from below the soil cover. Area contractors would be made aware of the requirements for proper disposal of subsurface soil from the area as they obtain the necessary building permit. Residents would also be made aware of the need for proper disposal. It is unlikely that a resident would excavate a large area of subsurface soil and spread it on the surface because it would require use of excavation equipment that most residents are not trained to operate. Smaller hand excavations, such as that necessary to plant bushes, are unlikely to result in a substantial exposure area.	• Administrative restrictions are expected to be effective in minimizing the potential for surface spreading of soil excavated from below the soil cover. Area contractors would be made aware of the requirements for proper disposal of subsurface soil from the area as they obtain the necessary building permit. Residents would also be made aware of the need for proper disposal. It is unlikely that a resident would excavate soil from below 2 feet or excavate a large area of subsurface soil and spread it on the surface because it would most likely require use of excavation equipment that residents are not trained to operate. Smaller hand excavations, such as that necessary to plant bushes, are unlikely to be at depths greater than the 2 foot cover thickness or result in a substantial exposure area.	• Administrative restrictions are expected to be effective in minimizing the potential for surface spreading of soil excavated from below buildings, roadways, driveways or sidewalks. Area contractors would most likely perform such excavations and would be made aware of the requirements for proper disposal of subsurface soil from the area as they obtain the necessary building permit.
4 Reduction of toxicity, mobility, or volume through treatment				
(a) Treatment process used	• Not applicable.	• Solidification/stabilization of soil and ash exceeding TCLP limits.	• Solidification/stabilization of soil and ash exceeding TCLP limits.	• Solidification/stabilization of soil and ash exceeding TCLP limits.
(b) Degree and quantity of TMV reduction	• Not applicable.	• An estimated 5,000 yd^3 of soil/ash would be treated to reduce the leachability of lead to less than 5 mg/L, as measured using the TCLP test.	• An estimated 13,000 yd^3 of soil/ash would be treated to reduce the leachability of lead to less than 5 mg/L, as measured using the TCLP test.	• An estimated 15,000 yd^3 of soil/ash would be treated to reduce the leachability of lead to less than 5 mg/L, as measured using the TCLP test.
(c) Irreversibility of TMV reduction	• Not applicable.	• Lead is not destroyed in the solidification/stabilization process but rather its mobility is significantly reduced. The treated soil/ash would be contained in a Subtitle D landfill, further reducing its potential to migrate.	• Lead is not destroyed in the solidification/stabilization process but rather its mobility is significantly reduced. The treated soil/ash would be contained in a Subtitle D landfill, further reducing its potential to migrate.	• Lead is not destroyed in the solidification/stabilization process but rather its mobility is significantly reduced. The treated soil/ash would be contained in a Subtitle D landfill, further reducing its potential to migrate.
(d) Type and quantity of treatment residuals	• None, because no treatment included.	• The treated residuals will include the 5,000 yd^3 of soil/ash plus the stabilization/solidification agent. The solidification/stabilization agents will not increase the volume of treated soils substantially.	• The treated residuals will include the 13,000 yd^3 of soil/ash plus the stabilization/solidification agent. The solidification/stabilization agents will not increase the volume of treated soils substantially.	• The treated residuals will include the 15,000 yd^3 of soil/ash plus the stabilization/solidification agent. The solidification/stabilization agents will not increase the volume of treated soils substantially.
(e) Statutory preference for treatment as a principal element	• Preference not met because no active treatment included.	• Preference met because treatment is directed at the contaminants posing the principal threat.	• Preference met because treatment is directed at the contaminants posing the principal threat.	• Preference met because treatment is directed at the contaminants posing the principal threat.
5. Short-term effectiveness				
(a) Protection of workers during remedial action	• No construction activities, so no risks to workers.	• Employing appropriate health and safety procedures and protective equipment can minimize risks to workers from exposure to contaminants. Construction-related injury risks would also be minimized through implementation of the plan.	• Employing appropriate health and safety procedures and protective equipment can minimize risks to workers from exposure to contaminants. Construction-related injury risks would also be minimized through implementation of the plan.	• Employing appropriate health and safety procedures and protective equipment can minimize risks to workers from exposure to contaminants. Construction-related injury risks would also be minimized through implementation of the plan.
(b) Protection of community during remedial action	• No construction activities, so no short-term risks to community.	• Risks to community during construction would be minimized through implementation of a construction health and safety plan. Specific elements of plan would focus on minimizing dust generation through use of dust control measures such as soil wetting and minimizing safety threats to the community by control of access to the construction area. • Also truck transport routes would be selected to minimize impacts from noise and inconvenience associated with the estimated 14,000 truckloads of soil that would be transported to or from the site. Based on a 20-month construction schedule about 23 trucks would be entering and leaving the site each day.	• Risks to community during construction would be minimized through implementation of a construction health and safety plan. Specific elements of plan would focus on minimizing dust generation through use of dust control measures such as soil wetting and minimizing safety threats to the community by control of access to the construction area. • Also truck transport routes would be selected to minimize impacts from noise and inconvenience associated with the estimated 34,000 truckloads of soil that would be transported to or from the site. Based on a 27-month construction schedule about 41 trucks would be entering and leaving the site each day.	• Risks to community during construction would be minimized through implementation of a construction health and safety plan. Specific elements of plan would focus on minimizing dust generation through use of dust control measures such as soil wetting and minimizing safety threats to the community by control of access to the construction area. • Also truck transport routes would be selected to minimize impacts from noise and inconvenience associated with the estimated 39,000 truckloads of soil that would be transported to or from the site. Based on a 27-month construction schedule about 47 trucks would be entering and leaving the site each day.
(c) Environmental impacts of remedial action	• No construction activities, so no environmental impacts from remedial action	• Environmental impacts will likely be limited to erosion of soils during excavation. The impacts can be minimized through the use of appropriate erosion control measures or stream diversion during construction.	• Environmental impacts will likely be limited to erosion of soils during excavation. The impacts can be minimized through the use of appropriate erosion control measures or stream diversion during construction.	• Environmental impacts will likely be limited to erosion of soils during excavation. The impacts can be minimized through the use of appropriate erosion control measures or stream diversion during construction.
(d) Time until RAOs are achieved	• RAO's not achieved.	• RAOs achieved at completion of the estimated 20-month construction schedule.	• RAOs achieved at completion of the estimated 27-month construction schedule.	• RAOs achieved at completion of the estimated 27-month construction schedule.

ROD Table 56

GNV3100818142 1.DOC/051370009

TABLE 5-2
Detailed Evaluation of Remedial Alternatives
Forest Street Site
Jacksonville Ash Feasibility Study, Revision 1

Alternative: Criterion	Alternative 1- No Further Action	Alternative 2- Soil Cover with Excavation and Offsite Disposal	Alternative 3- Shallow Excavation, Offsite Disposal, and Soil Cover	Alternative 4- Deep Excavation and Offsite Disposal
6. Implementability				
(a) Technical feasibility	• No technical constraints.	• No technical constraints although construction contractor selection and oversight will be important in successful project performance.	• No technical constraints although construction contractor selection and oversight will be important in successful project performance.	• No technical constraints although construction contractor selection and oversight will be important in successful project performance.
(b) Administrative feasibility	• No impediments.	• Excavation and placement of soil cover on residential properties will require extensive coordination with local community officials and individual residents. • Administrative restrictions will also require close coordination with local officials.	• Excavation and placement of soil cover on residential properties will require extensive coordination with local community officials and individual residents. • Administrative restrictions will also require close coordination with local officials.	• Excavation on residential properties will require extensive coordination with local community officials and individual residents. • Administrative restrictions will also require close coordination with local officials.
(c) Availability of services and materials	• None needed.	• Trail Ridge landfill has sufficient capacity to accept soil for disposal. • Services and materials readily available for other alternative components.	• Trail Ridge landfill has sufficient capacity to accept soil for disposal. • Services and materials readily available for other alternative components.	• Trail Ridge landfill has sufficient capacity to accept soil for disposal. • Services and materials readily available for other alternative components.
7. Total Cost	Capital Cost $0 Average Annual O&M Cost $5,200 Total Present Worth Cost $70,000	Capital Cost $12,800,000 Average Annual O&M Cost $31,000 Total Present Worth Cost $13,200,000	Capital Cost $21,600,000 Average Annual O&M Cost $65,000 Total Present Worth Cost $22,500,000	Capital Cost $24,200,000 Average Annual O&M Cost $0 Total Present Worth Cost $24,200,000

[a]For a detailed listing and analysis of key ARARS, see Appendix D.

ROD Table 56

TABLE 6-1
Detailed Evaluation of Remedial Alternatives
5th & Cleveland Site
Jacksonville Ash Feasibility Study; Revision 1

Alternative:				
Criterion	Alternative 1- No Further Action	Alternative 2- Soil Cover with Excavation and Offsite Disposal	Alternative 3- Shallow Excavation, Offsite Disposal, and Soil Cover	Alternative 4- Deep Excavation and Offsite Disposal
1. Overall protection of human health and the environment.	• The risks to residents exposed to the surface or subsurface soil for the school property area and the fenced area north of the property would continue to exceed the acceptable non cancer risk threshold (HI greater than 1) and exceed an ELCR of 1 x 10^{-4}. • Soil lead concentrations would continue to exceed the RGO of 400 mg/kg. Lead concentrations greater than this value in residential areas surrounding the school property are considered a potential public health threat, depending on the bioavailability of lead and the level of exposure pathway completeness. • Land use restrictions to minimize potential exposure to subsurface soil exceeding RGOs would not be enacted.	• The soil cover, administrative restrictions and stabilization of the creek banks are protective of human health and the environment. • Soil cover minimizes potential for direct contact with soil exceeding RGOs, thus preventing unacceptable risks from this exposure path. • Potential for human exposure to subsurface soil will be minimized *through administrative restrictions.* • Risk assessment concluded that a potential unacceptable risk exists from ingestion of vegetables grown in soil with lead exceeding RGOs. Excavation and backfilling with topsoil to depths of 2 feet would be necessary in areas where residents maintain vegetable gardens. • Soil cover reduces risks to terrestrial biota from direct contact with contaminated soil. • Erosion of soil exceeding RGOs is prevented through soil cover. • Risks related to construction are manageable although dust control will be important and safe loading and transport of an estimated 17,000 trucks during the 34-month construction period will be important.	• The soil cover, removal of shallow soils exceeding RGOs in residential areas, administrative restrictions and stabilization of the creek banks are protective of human health and the environment. • Soil cover minimizes potential for direct contact with soil exceeding RGOs, thus preventing unacceptable risks from this exposure path. • *Potential for human exposure to subsurface soil below 2 feet will be* minimized through administrative restrictions. • Soil cover reduces risks to terrestrial biota from direct contact with contaminated soil. • Erosion of soil exceeding RGOs is prevented through soil cover. • Risks related to construction are manageable although dust control will be important and safe loading and transport of an estimated 36,000 trucks during the 45 month construction period will be important.	• The excavation and offsite disposal of soils exceeding RGOs and stabilization of the creek banks are protective of human health and the environment. • Direct contact risks are eliminated through removal of the soil posing unacceptable risks. • *Risks to terrestrial biota from direct contact with contaminated soil are* nearly eliminated. Soil exceeding RGOs will remain below buildings, roadways, driveways, and sidewalks. • Erosion of surface soil and soil along stream banks exceeding RGOs is eliminated. • Risks related to construction could be significant and would have to be actively managed. Dust control efforts will be important because nearly all the ash with *high concentrations of lead will be excavated,* loaded into trucks and transported offsite. The potential for vehicle or pedestrian accidents is much higher for this alternative because of the estimated 38,000 trucks to be loaded and driven through the surrounding neighborhoods during the 45-month construction period.
2. Compliance with ARARs[a]	• The EPA chemical- specific ARAR of 400 mg/kg for lead would not be met by this alternative because exposure to soils containing 400 parts per million (ppm) lead could occur.	• The EPA chemical- specific ARAR of 400 mg/kg for lead would be met by this alternative. • FAC 62-785 Brownfield Cleanup Criteria of a minimum of 2 feet of soil meeting residential cleanup criteria would not be met. However this regulation is a TBC and is not required to be met for the Jacksonville Ash Site. • RCRA requirements for disposal of contaminated soil would be met. Specifically, excavated soil would be tested for TCLP lead and the soil would be treated to levels below the TCLP limit of 5 mg/L. LDRs for contaminated soil (the higher of 90% reduction in constituent concentrations or 10 x UTS) would also be met prior to landfilling the soil as a solid waste. • Regulations requiring control of erosion and particulate emissions during construction activities would be met.	• The EPA chemical-specific ARAR of 400 mg/kg for lead would be met by this alternative. • RCRA requirements for disposal of contaminated soil would be met. Specifically, excavated soil would be tested for TCLP lead and the soil would be treated to levels below the TCLP limit of 5 mg/L. LDRs for contaminated soil (the higher of 90% reduction in constituent concentrations or *10 x UTS)* would also be met prior to landfilling the soil as a solid waste. • Regulations requiring control of erosion and particulate emissions during construction activities would be met.	• The EPA chemical-specific ARAR of 400 mg/kg for lead would be met by this alternative. • RCRA requirements for disposal of contaminated soil would be met. Specifically, excavated soil would be tested for TCLP lead and the soil would be treated to levels below the TCLP limit of 5 mg/L. LDRs for contaminated soil (the higher of 90% reduction in constituent concentrations or *10 x UTS)* would also be met prior to landfilling the soil as a solid waste. • Regulations requiring control of erosion and particulate emissions during construction activities would be met.
3. Long-term effectiveness and permanence				
(a) Magnitude of residual risks	• No significant change in risk because no action taken. • Volume of soil exceeding RGOs is 240,000 yd[3].	• The soil cover prevents risks related to direct contact with surficial soils. Residual direct contact risks exceeding acceptable levels however would occur if subsurface soil from excavations was spread on the surface where long-term exposure to the soil could occur. Based on the risk assessment results for exposure to subsurface soil, these risks would be a HI of 7 and an ELCR of 1.3 x 10^{-4}. In addition lead concentrations greater than 400 mg/kg would occur if subsurface soil was spread on the surface. This presents a potential public health threat, depending on the bioavailability of lead and the level of exposure pathway completeness. • Residual volume of soil exceeding RGOs is 175,000 yd[3]. • Potential unacceptable risks would occur if vegetables were grown in areas where lead exceeds RGOs in the root zone of the plants	• The soil cover prevents risks related to direct contact with surficial soils. Residual direct contact risks exceeding acceptable levels however would occur if subsurface soil was spread on the surface where long-term exposure to the soil could occur. Based on the risk assessment results for exposure to subsurface soil, these risks would be a HI of 7 and an ELCR of 1.3 x 10^{-4}. In addition lead concentrations greater than 400 mg/kg would occur if subsurface soil was spread on the surface. This presents a potential public health threat, depending on the bioavailability of lead and the level of exposure pathway completeness. • *Residual volume of soil exceeding RGOs is 100,000 yd[3].*	• Residual risks related to direct contact would remain only if soils exceeding RGOs from below buildings, roadways, driveways and sidewalks are excavated and spread on the surface. Based on the risk assessment results for exposure to subsurface soil, these risks would be a HI of 7 and an ELCR of 1.3 x 10^{-4}. In addition a potential public health threat from exposure to lead concentrations greater than 400 mg/kg would occur if subsurface soil was spread on the surface. • Residual volume of soil exceeding RGOs (i.e. below buildings, roadways, driveways and sidewalks) is 95,000 yd[3].

ROD Table 57

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TABLE 6-1
Detailed Evaluation of Remedial Alternatives
5th & Cleveland Site
Jacksonville Ash Feasibility Study, Revision 1

Alternative: Criterion	Alternative 1- No Further Action	Alternative 2- Soil Cover with Excavation and Offsite Disposal	Alternative 3- Shallow Excavation, Offsite Disposal, and Soil Cover	Alternative 4- Deep Excavation and Offsite Disposal
(b) Adequacy and reliability of controls	• Not applicable	• Administrative restrictions are expected to be effective in minimizing the potential for surface spreading of soil excavated from below the soil cover. Area contractors would be made aware of the requirements for proper disposal of subsurface soil from the area as they obtain the necessary building permit. Residents would also be made aware of the need for proper disposal. It is unlikely that a resident would excavate a large area of subsurface soil and spread it on the surface because it would require use of excavation equipment that most residents are not trained to operate. Smaller hand excavations, such as that necessary to plant bushes, are unlikely to result in a substantial exposure area.	• Administrative restrictions are expected to be effective in minimizing the potential for surface spreading of soil excavated from below the soil cover. Area contractors would be made aware of the requirements for proper disposal of subsurface soil from the area as they obtain the necessary building permit. Residents would also be made aware of the need for proper disposal. It is unlikely that a resident would excavate soil from below 2 feet or excavate a large area of subsurface soil and spread it on the surface because it would most likely require use of excavation equipment that residents are not trained to operate. Smaller hand excavations, such as that necessary to plant bushes, are unlikely to be at depths greater than the 2 foot cover thickness or result in a substantial exposure area.	• Administrative restrictions are expected to be effective in minimizing the potential for surface spreading of soil excavated from below buildings, roadways, driveways or sidewalks. Area contractors would most likely perform such excavations and would be made aware of the requirements for proper disposal of subsurface soil from the area as they obtain the necessary building permit.
4. *Reduction of toxicity, mobility, or volume through treatment*				
(a) Treatment process used	• Not applicable.	• Solidification/stabilization of soil and ash exceeding TCLP limits.	• Solidification/stabilization of soil and ash exceeding TCLP limits.	• Solidification/stabilization of soil and ash exceeding TCLP limits.
(b) Degree and quantity of TMV reduction	• Not applicable.	• An estimated 6,500 yd^3 of soil/ash would be treated to reduce the leachability of lead to less than 5 mg/L, as measured using the TCLP test.	• An estimated 14,000 yd^3 of soil/ash would be treated to reduce the leachability of lead to less than 5 mg/L, as measured using the TCLP test.	• An estimated 14,500 yd^3 of soil/ash would be treated to reduce the leachability of lead to less than 5 mg/L, as measured using the TCLP test.
(c) Irreversibility of TMV reduction	• Not applicable.	• Lead is not destroyed in the solidification/stabilization process but rather its mobility is significantly reduced. The treated soil/ash would be contained in a Subtitle D landfill, further reducing its potential to migrate.	• Lead is not destroyed in the solidification/stabilization process but rather its mobility is significantly reduced. The treated soil/ash would be contained in a Subtitle D landfill, further reducing its potential to migrate.	• Lead is not destroyed in the solidification/stabilization process but rather its mobility is significantly reduced. The treated soil/ash would be contained in a Subtitle D landfill, further reducing its potential to migrate.
(d) Type and quantity of treatment residuals	• None, because no treatment included.	• The treated residuals will include the 6,500 yd^3 of soil/ash plus the stabilization/solidification agent. The solidification/stabilization agents will not increase the volume of treated soils substantially.	• The treated residuals will include the 14,000 yd^3 of soil/ash plus the stabilization/solidification agent. The solidification/stabilization agents will not increase the volume of treated soils substantially.	• The treated residuals will include the 14,500 yd^3 of soil/ash plus the stabilization/solidification agent. The solidification/stabilization agents will not increase the volume of treated soils substantially.
(e) Statutory preference for treatment as a principal element	• Preference not met because no active treatment included.	• Preference met because treatment is directed at the contaminants posing the principal threat.	• Preference met because treatment is directed at the contaminants posing the principal threat.	• Preference met because treatment is directed at the contaminants posing the principal threat.
5. Short-term effectiveness				
(a) Protection of workers during remedial action	• No construction activities, so no risks to workers.	• *Employing appropriate health and safety procedures and protective* equipment can minimize risks to workers from exposure to contaminants. Construction-related injury risks would also be minimized through implementation of the plan.	• *Employing appropriate health and safety procedures and protective* equipment can minimize risks to workers from exposure to contaminants. Construction-related injury risks would also be minimized through implementation of the plan.	• *Employing appropriate health and safety procedures and protective* equipment can minimize risks to workers from exposure to contaminants. Construction-related injury risks would also be minimized through implementation of the plan.
(b) Protection of community during remedial action	• No construction activities, so no short-term risks to community.	• Risks to community during construction would be minimized through implementation of a construction health and safety plan. Specific elements of plan would focus on minimizing dust generation through use of dust control measures such as soil wetting and minimizing safety threats to the community by control of access to the construction area. • Also truck transport routes would be selected to minimize impacts from noise and inconvenience associated with the estimated 17,000 truckloads of soil that would be transported to or from the site. Based on a 34-month construction schedule about 16 trucks would be entering and leaving the site each day.	• Risks to community during construction would be minimized through implementation of a construction health and safety plan. Specific elements of plan would focus on minimizing dust generation through use of dust control measures such as soil wetting and minimizing safety threats to the community by control of access to the construction area. • Also truck transport routes would be selected to minimize impacts from noise and inconvenience associated with the estimated 36,000 truckloads of soil that would be transported to or from the site. Based on a 45-month construction schedule about 26 trucks would be entering and leaving the site each day.	• Risks to community during construction would be minimized through implementation of a construction health and safety plan. Specific elements of plan would focus on minimizing dust generation through use of dust control measures such as soil wetting and minimizing safety threats to the community by control of access to the construction area. • Also truck transport routes would be selected to minimize impacts from noise and inconvenience associated with the estimated 38,000 truckloads of soil that would be transported to or from the site. Based on a 45-month construction schedule about 27 trucks would be entering and leaving the site each day.
(c) Environmental impacts of remedial action	• No construction activities, so no environmental impacts from remedial action.	• Environmental impacts will likely be limited to erosion of soils during excavation. The impacts can be minimized through the use of appropriate erosion control measures or stream diversion during construction.	• Environmental impacts will likely be limited to erosion of soils during excavation. The impacts can be minimized through the use of appropriate erosion control measures or stream diversion during construction.	• Environmental impacts will likely be limited to erosion of soils during excavation. The impacts can be minimized through the use of appropriate erosion control measures or stream diversion during construction.

ROD Table 57

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TABLE 6-1
Detailed Evaluation of Remedial Alternatives
5th & Cleveland Site
Jacksonville Ash Feasibility Study, Revision 1

Criterion	Alternative 1- No Further Action	Alternative 2- Soil Cover with Excavation and Offsite Disposal	Alternative 3- Shallow Excavation, Offsite Disposal, and Soil Cover	Alternative 4- Deep Excavation and Offsite Disposal
(d) Time until RAOs are achieved	• RAO's not achieved.	• RAOs achieved at completion of the estimated 34-month construction schedule.	• RAOs achieved at completion of the estimated 45 month construction schedule.	• RAOs achieved at completion of the estimated 45 month construction schedule.
6. Implementability				
(a) Technical feasibility	• No technical constraints.	• No technical constraints although construction contractor selection and oversight will be important in successful project performance.	• No technical constraints although construction contractor selection and oversight will be important in successful project performance.	• No technical constraints although construction contractor selection and oversight will be important in successful project performance.
(b) Administrative feasibility	• No impediments.	• Excavation and placement of soil cover on residential properties will require extensive coordination with local community officials and individual residents. • Administrative restrictions will also require close coordination with local officials.	• Excavation and placement of soil cover on residential properties will require extensive coordination with local community officials and individual residents. • Administrative restrictions will also require close coordination with local officials.	• Excavation on residential properties will require extensive coordination with local community officials and individual residents. • Administrative restrictions will also require close coordination with local officials.
(c) Availability of services and materials	• None needed.	• Trail Ridge landfill has sufficient capacity to accept soil for disposal. • Services and materials readily available for other alternative components.	• Trail Ridge landfill has sufficient capacity to accept soil for disposal. • Services and materials readily available for other alternative components.	• Trail Ridge landfill has sufficient capacity to accept soil for disposal. • Services and materials readily available for other alternative components.
7. Total Cost	Capital Cost $0 Average Annual O&M Cost $5,200 Total Present Worth Cost $70,000	Capital Cost $20,900,000 Average Annual O&M Cost $38,000 Total Present Worth Cost $21,400,000	Capital Cost $29,100,000 Average Annual O&M Cost $31,000 Total Present Worth Cost $29,500,000	Capital Cost $29,700,000 Average Annual O&M Cost $0 Total Present Worth Cost $29,700,000

[a]For a detailed listing and analysis of key ARARS, see Appendix D.

ROD Table 57

GNV3100818142! DOC/051370006

TABLE 7-1
Detailed Evaluation of Remedial Alternatives
Lonnie C. Miller, Sr. Park Site
Jacksonville Ash Feasibility Study, Revision 1

Alternative: Criterion	Alternative 1- No Further Action	Alternative 2- Soil Cover with Excavation and Offsite Disposal	Alternative 3a- Shallow Excavation, Offsite Disposal, and Soil Cover	Alternative 3b- Shallow Excavation, Offsite Disposal and Backfill	Alternative 4- Deep Excavation and Offsite Disposal
1. Overall protection of human health and the environment.	• The risks to residents exposed to the surface or subsurface soil for the school property area and the fenced area north of the property would continue to exceed the acceptable non cancer risk threshold (HI greater than 1) and exceed an ELCR of 1 x 10^{-4}. • Soil lead concentrations would continue to exceed the RGO of 400 mg/kg. Lead concentrations greater than this value in residential areas surrounding the school property are considered a potential public health threat, depending on the bioavailability of lead and the level of exposure pathway completeness. • Land use restrictions to minimize potential exposure to subsurface soil exceeding RGOs would not be enacted.	• The soil cover, administrative restrictions, and stabilization of the creek banks are protective of human health and the environment. • Soil cover minimizes potential for direct contact with soil exceeding RGOs, thus preventing unacceptable risks from this exposure path. • Potential for human exposure to subsurface soil will be minimized through administrative restrictions. • Risk assessment concluded that a potential unacceptable risk exists from ingestion of vegetables grown in soil with lead exceeding RGOs. Excavation and backfilling with topsoil to depths of 2 feet would be necessary in areas where residents maintain vegetable gardens. • Soil cover reduces risks to terrestrial biota from direct contact with contaminated soil. • Erosion of soil exceeding RGOs is prevented through soil cover. • Risks related to construction are manageable although dust control will be important and safe loading and transport of an estimated 14,000 trucks during the 12-month construction period will be important.	• The soil cover, removal of shallow soils exceeding RGOs in residential areas, administrative restrictions and stabilization of the creek banks are protective of human health and the environment. • Soil cover minimizes potential for direct contact with soil exceeding RGOs, thus preventing unacceptable risks from this exposure path. • Potential for human exposure to subsurface soil below 2 feet will be minimized through administrative restrictions. • Soil cover reduces risks to terrestrial biota from direct contact with contaminated soil. • Erosion of soil exceeding RGOs is prevented through soil cover. • Risks related to construction are manageable although dust control will be important and safe loading and transport of an estimated 55,000 trucks during the 24-month construction period will be important.	• The soil cover, removal of shallow soils exceeding RGOs in residential areas, administrative restrictions and stabilization of the creek banks are protective of human health and the environment. • Backfill minimizes potential for direct contact with soil exceeding RGOs, thus preventing unacceptable risks from this exposure path. • Potential for human exposure to subsurface soil below 2 feet will be minimized through administrative restrictions. • Soil cover reduces risks to terrestrial biota from direct contact with contaminated soil. • Erosion of soil exceeding RGOs is prevented through soil backfill cover. • Risks related to construction are manageable although dust control will be important and safe loading and transport of an estimated 85,000 trucks during the 26-month construction period will be important.	• The excavation and offsite disposal of soils exceeding RGOs and stabilization of the creek banks are protective of human health and the environment. • Direct contact risks are eliminated through removal of the soil posing unacceptable risks. • Risks to terrestrial biota from direct contact with contaminated soil are nearly eliminated. Soil exceeding RGOs will remain below buildings, roadways, driveways, and sidewalks. • *Risks related to construction could be* significant and would have to be actively managed. Dust control efforts will be important because nearly all the ash with high concentrations of lead will be excavated, loaded into trucks and transported offsite. The potential for vehicle or pedestrian accidents is much higher for this alternative because of the estimated 217,000 trucks to be loaded and driven through the surrounding neighborhoods during the 32-month construction period.
2. Compliance with ARARs[a]	• The EPA chemical- specific ARAR of 400 mg/kg for lead would not be met by this alternative because exposure to soils containing 400 parts per million (ppm) lead could occur.	• The EPA chemical- specific ARAR of 400 mg/kg for lead would be met by this alternative. • FAC 62-785 Brownfield Cleanup Criteria of a minimum of 2 feet of soil meeting residential cleanup criteria would not be met. However this regulation is a TBC and is not required to be met for the Jacksonville Ash Site. • RCRA requirements for disposal of contaminated soil would be met. Specifically, excavated soil would be tested for TCLP lead and the soil would be treated to levels below the TCLP limit of 5 mg/L. LDRs for contaminated soil (the higher of 90% reduction in constituent concentrations or 10 x UTS) would also be met prior to landfilling the soil as a solid waste. • Regulations requiring control of erosion and particulate emissions during construction activities would be met.	• The EPA chemical-specific ARAR of 400 mg/kg for lead would be met by this alternative. • RCRA requirements for disposal of contaminated soil would be met. Specifically, excavated soil would be tested for TCLP lead and the soil would be treated to levels below the TCLP limit of 5 mg/L. LDRs for contaminated soil (the higher of 90% reduction in constituent concentrations or 10 x UTS) would also be met prior to landfilling the soil as a solid waste. • Regulations requiring control of erosion and particulate emissions during construction activities would be met.	• The EPA chemical-specific ARAR of 400 mg/kg for lead would be met by this alternative. • RCRA requirements for disposal of contaminated soil would be met. Specifically, excavated soil would be tested for TCLP lead and the soil would be treated to levels below the TCLP limit of 5 mg/L. LDRs for contaminated soil (the higher of 90% reduction in constituent concentrations or 10 x UTS) would also be met prior to landfilling the soil as a solid waste. • Regulations requiring control of erosion and particulate emissions during construction activities would be met.	• The EPA chemical-specific ARAR of 400 mg/kg for lead would be met by this alternative. • RCRA requirements for disposal of contaminated soil would be met. Specifically, excavated soil would be tested for TCLP lead and the soil would be treated to levels below the TCLP limit of 5 mg/L. LDRs for contaminated soil (the higher of 90% reduction in constituent concentrations or 10 x UTS) would also be met prior to landfilling the soil as a solid waste. • Regulations requiring control of erosion and particulate emissions during construction activities would be met.

ROD Table 58

TABLE 7-1
Detailed Evaluation of Remedial Alternatives
Lonnie C. Miller, Sr. Park Site
Jacksonville Ash Feasibility Study, Revision 1

Alternative: Criterion	Alternative 1- No Further Action	Alternative 2- Soil Cover with Excavation and Offsite Disposal	Alternative 3a- Shallow Excavation, Offsite Disposal, and Soil Cover	Alternative 3b- Shallow Excavation, Offsite Disposal and Backfill	Alternative 4- Deep Excavation and Offsite Disposal
3. Long-term effectiveness and permanence					
(a) Magnitude of residual risks	• No significant change in risk because no action taken. • Volume of soil exceeding RGOs is 856,000 yd^3.	• The soil cover prevents risks related to direct contact with surficial soils. Residual direct contact risks exceeding acceptable levels however would occur if subsurface soil from *resident excavations was spread on the* surface where long-term exposure to the soil could occur. Based on the risk assessment results for exposure to subsurface soil, these risks would be a HI of 32 and an ELCR of 1.4 x 10^{-4}. In addition, lead concentrations greater than 400 mg/kg would occur if subsurface soil was spread on the surface. This presents a potential public health threat, depending on the bioavailability of lead and the level of exposure pathway completeness. • Residual volume of soil exceeding RGOs is 832,000 yd^3. • Potential unacceptable risks would occur if vegetables were grown in areas where lead exceeds RGOs in the root zone of the plants.	• The soil cover prevents risks related to direct contact with surficial soils. Residual direct contact risks exceeding acceptable levels however would occur if subsurface *soil was spread on the surface where* long-term exposure to the soil could occur. Based on the risk assessment results for exposure to subsurface soil, these risks would be a HI of 32 and an ELCR of 1.4 x 10^{-4}. In addition, lead concentrations greater than 400 mg/kg would occur if subsurface soil was spread on the surface. This presents a potential public health threat, depending on the bioavailability of lead and the level of exposure pathway completeness. • Residual volume of soil exceeding RGOs is 763,000 yd^3.	• The soil cover prevents risks related to direct contact with surficial soils. Residual direct contact risks exceeding acceptable levels however would occur if subsurface soil was *spread on the surface where long-term* exposure to the soil could occur. Based on the risk assessment results for exposure to subsurface soil, these risks would be a HI of 32 and an ELCR of 1.4 x 10^{-4}. In addition, lead concentrations greater than 400 mg/kg would occur if subsurface soil was spread on the surface. This presents a potential public health threat, depending on the bioavailability of lead and the level of exposure pathway completeness. • Residual volume of soil exceeding RGOs is 528,000 yd^3.	• Residual risks related to direct contact would remain only if soils exceeding RGOs from below buildings, roadways, driveways and sidewalks are excavated and spread *on the surface. Based on the* risk assessment results for exposure to subsurface soil, these risks would be a HI of 32 and an ELCR of 1.4 x 10^{-4}. In addition, a potential public health threat from exposure to lead concentrations greater than 400 mg/kg would occur if subsurface soil was spread on the surface. • Residual volume of soil exceeding RGOs (i.e. below buildings, roadways, driveways and sidewalks) is 21,000 yd^3.
(b) Adequacy and reliability of controls	• Not applicable	• Administrative restrictions are expected to be effective in minimizing the potential for surface spreading of soil excavated from below the soil cover. Area contractors would be made aware of the requirements for proper disposal of subsurface soil from the area as they obtain the necessary building permit. Residents would also be made aware of the need for *proper disposal. It is unlikely that a resident* would excavate a large area of subsurface soil and spread it on the surface because it would require use of excavation equipment that most residents are not trained to operate. Smaller hand excavations, such as that necessary to plant bushes, are unlikely to result in a substantial exposure area.	• Administrative restrictions are expected to be effective in minimizing the potential for surface spreading of soil excavated from below the soil cover. Area contractors would be made aware of the requirements for proper disposal of subsurface soil from the area as they obtain the necessary building permit. Residents would also be *made aware of the need for proper* disposal. It is unlikely that a resident would excavate soil from below 2 feet or excavate a large area of subsurface soil and spread it on the surface because it would most likely require use of excavation equipment that residents are not trained to operate. Smaller hand excavations, such as that necessary to plant bushes, are unlikely to be at depths greater than the 2 foot cover thickness or result in a substantial exposure area.	• Administrative restrictions are expected to be effective in minimizing the potential for surface spreading of soil excavated from below the soil cover. Area contractors would be made aware of the requirements for proper disposal of subsurface soil from the area as they obtain the necessary building permit. Residents would also be made aware *of the need for proper disposal. It is unlikely* that a resident would excavate soil from below 2 feet or excavate a large area of subsurface soil and spread it on the surface because it would most likely require use of excavation equipment that residents are not trained to operate. Smaller hand excavations, such as that necessary to plant bushes, are unlikely to be at depths greater than the 2 foot cover thickness or result in a substantial exposure area.	• Administrative restrictions are expected to be effective in minimizing the potential for surface spreading of soil excavated from below buildings, roadways, driveways or sidewalks. Area contractors would most likely perform such excavations and would be made aware of the requirements for proper disposal of subsurface soil from the *area as they obtain the necessary building* permit.
4. Reduction of toxicity, mobility, or volume through treatment					
(a) Treatment process used	• *Not applicable.*	• *Solidification/stabilization of soil and ash* exceeding TCLP limits.	• *Solidification/stabilization of soil and ash* exceeding TCLP limits.	• *Solidification/stabilization of soil and ash* exceeding TCLP limits.	• *Solidification/stabilization of soil and ash* exceeding TCLP limits.
(b) Degree and quantity of TMV reduction	• Not applicable.	• An estimated 2,400 yd^3 of soil/ash would be treated to reduce the leachability of lead to less than 5 mg/L, as measured using the TCLP test.	• An estimated 9,300 yd^3 of soil/ash would be treated to reduce the leachability of lead to less than 5 mg/L, as measured using the TCLP test.	• An estimated 32,800 yd^3 of soil/ash would be treated to reduce the leachability of lead to less than 5 mg/L, as measured using the TCLP test.	• An estimated 83,500 yd^3 of soil/ash would be treated to reduce the leachability of lead to less than 5 mg/l, as measured using the TCLP test.

ROD Table 58

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TABLE 7-1
Detailed Evaluation of Remedial Alternatives
Lonnie C. Miller, Sr. Park Site
Jacksonville Ash Feasibility Study, Revision 1

Alternative: Criterion	Alternative 1- No Further Action	Alternative 2- Soil Cover with Excavation and Offsite Disposal	Alternative 3a- Shallow Excavation, Offsite Disposal, and Soil Cover	Alternative 3b- Shallow Excavation, Offsite Disposal and Backfill	Alternative 4- Deep Excavation and Offsite Disposal
(c) Irreversibility of TMV reduction	• Not applicable.	• Lead is not destroyed in the solidification/stabilization process but rather its mobility is significantly reduced. The treated soil/ash would be contained in a Subtitle D landfill, further reducing its potential to migrate.	• Lead is not destroyed in the solidification/stabilization process but rather its mobility is significantly reduced. The treated soil/ash would be contained in a Subtitle D landfill, further reducing its potential to migrate.	• Lead is not destroyed in the solidification/stabilization process but rather its mobility is significantly reduced. The treated soil/ash would be contained in a Subtitle D landfill, further reducing its potential to migrate.	• Lead is not destroyed in the solidification/stabilization process but rather its mobility is significantly reduced. The treated soil/ash would be contained in a Subtitle D landfill, further reducing its potential to migrate.
(d) Type and quantity of treatment residuals	• None, because no treatment included.	• The treated residuals will include the 2,400 yd^3 of soil/ash plus the stabilization/solidification agent. The solidification/stabilization agents will not increase the volume of treated soils substantially.	• The treated residuals will include the 9,300 yd^3 of soil/ash plus the stabilization/solidification agent. The solidification/stabilization agents will not increase the volume of treated soils substantially.	• The treated residuals will include the 32,800 yd^3 of soil/ash plus the stabilization/solidification agent. The solidification/stabilization agents will not increase the volume of treated soils substantially.	• The treated residuals will include the 83,500 yd^3 of soil/ash plus the stabilization/solidification agent. The solidification/stabilization agents will not increase the volume of treated soils substantially.
(e) Statutory preference for treatment as a principal element	• Preference not met because no active treatment included.	• Preference met because treatment is directed at the contaminants posing the principal threat.	• Preference met because treatment is directed at the contaminants posing the principal threat.	• Preference met because treatment is directed at the contaminants posing the principal threat.	• Preference met because treatment is directed at the contaminants posing the principal threat.
5. Short-term effectiveness					
(a) Protection of workers during remedial action	• No construction activities, so no risks to workers.	• Employing appropriate health and safety procedures and protective equipment can minimize risks to workers from exposure to contaminants. Construction-related injury risks would also be minimized through implementation of the plan.	• Employing appropriate health and safety procedures and protective equipment can minimize risks to workers from exposure to contaminants. Construction-related injury risks would also be minimized through implementation of the plan.	• Employing appropriate health and safety procedures and protective equipment can minimize risks to workers from exposure to contaminants. Construction-related injury risks would also be minimized through implementation of the plan.	• Employing appropriate health and safety procedures and protective equipment can minimize risks to workers from exposure to contaminants. Construction-related injury risks would also be minimized through implementation of the plan.
(b) Protection of community during remedial action	• No construction activities, so no short-term risks to community.	• Risks to community during construction would be minimized through implementation of a construction health and safety plan. Specific elements of plan would focus on minimizing dust generation through use of dust control measures such as soil wetting and minimizing safety threats to the community by control of access to the construction area. • Also truck transport routes would be selected to minimize impacts from noise and inconvenience associated with the estimated 14,000 truckloads of soil that would be transported to or from the site. Based on an 12-month construction schedule about 38 trucks would be entering and leaving the site each day.	• Risks to community during construction would be minimized through implementation of a construction health and safety plan. Specific elements of plan would focus on minimizing dust generation through use of dust control measures such as soil wetting and minimizing safety threats to the community by control of access to the construction area. • Also truck transport routes would be selected to minimize impacts from noise and inconvenience associated with the estimated 55,000 truckloads of soil that would be transported to or from the site. Based on a 24-month construction schedule about 75 trucks would be entering and leaving the site each day.	• Risks to community during construction would be minimized through implementation of a construction health and safety plan. Specific elements of plan would focus on minimizing dust generation through use of dust control measures such as soil wetting and minimizing safety threats to the community by control of access to the construction area. • Also truck transport routes would be selected to minimize impacts from noise and inconvenience associated with the estimated 85,000 truckloads of soil that would be transported to or from the site. Based on a 26-month construction schedule about 110 trucks would be entering and leaving the site each day.	• Risks to community during construction would be minimized through implementation of a construction health and safety plan. Specific elements of plan would focus on minimizing dust generation through use of dust control measures such as soil wetting and minimizing safety threats to the community by control of access to the construction area. • Also truck transport routes would be selected to minimize impacts from noise and inconvenience associated with the estimated 217,000 truckloads of soil that would be transported to or from the site. Based on a 32-month construction schedule about 222 trucks would be entering and leaving the site each day.
(c) Environmental impacts of remedial action	• No construction activities, so no environmental impacts from remedial action.	• Environmental impacts will likely be limited to erosion of soils during excavation, particularly during stabilization of the stream banks. The impacts can be minimized through the use of appropriate erosion control measures or stream diversion during construction.	• Environmental impacts will likely be limited to erosion of soils during excavation, particularly during stabilization of the stream banks. The impacts can be minimized through the use of appropriate erosion control measures or stream diversion during construction.	• Environmental impacts will likely be limited to erosion of soils during excavation, particularly during stabilization of the stream banks. The impacts can be minimized through the use of appropriate erosion control measures or stream diversion during construction.	• Environmental impacts will likely be limited to erosion of soils during excavation, particularly during stabilization of the stream banks. The impacts can be minimized through the use of appropriate erosion control measures or stream diversion during construction.

ROD Table 58

TABLE 7-1
Detailed Evaluation of Remedial Alternatives
Lonnie C. Miller, Sr. Park Site
Jacksonville Ash Feasibility Study, Revision 1

Alternative: Criterion	Alternative 1- No Further Action	Alternative 2- Soil Cover with Excavation and Offsite Disposal	Alternative 3a- Shallow Excavation, Offsite Disposal, and Soil Cover	Alternative 3b- Shallow Excavation, Offsite Disposal and Backfill	Alternative 4- Deep Excavation and Offsite Disposal
(d) Time until RAOs are achieved	• RAOs not achieved.	• RAOs achieved at completion of the estimated 12-month construction schedule.	• RAOs achieved at completion of the estimated 24-month construction schedule.	• RAOs achieved at completion of the estimated 26 month construction schedule.	• RAOs achieved at completion of the estimated 32 month construction schedule.
6. Implementability					
(a) Technical feasibility	• No technical constraints.	• No technical constraints although construction contractor selection and oversight will be important in successful project performance.	• No technical constraints although construction contractor selection and oversight will be important in successful project performance.	• No technical constraints although construction contractor selection and oversight will be important in successful project performance.	• No technical constraints although construction contractor selection and oversight will be important in successful project performance.
(b) Administrative feasibility	• No impediments.	• Excavation and placement of soil cover on residential properties will require extensive coordination with local community officials and individual residents. • Administrative restrictions will also require close coordination with local officials.	• Excavation and placement of soil cover on residential properties will require extensive coordination with local community officials and individual residents. • Administrative restrictions will also require close coordination with local officials.	• Excavation and placement of soil cover on residential properties will require extensive coordination with local community officials and individual residents. • Administrative restrictions will also require close coordination with local officials.	• Excavation on residential properties will require extensive coordination with local community officials and individual residents. • Administrative restrictions will also require close coordination with local officials.
(c) Availability of services and materials	• None needed.	• Trail Ridge landfill has sufficient capacity to accept soil for disposal. • Services and materials readily available for other alternative components.	• Trail Ridge landfill has sufficient capacity to accept soil for disposal. • Services and materials readily available for other alternative components.	• Trail Ridge landfill has sufficient capacity to accept soil for disposal. • Services and materials readily available for other alternative components.	• Trail Ridge landfill has sufficient capacity to accept soil for disposal. • Services and materials readily available for other alternative components.
7. Total Cost	Capital Cost $0 Average Annual O&M Cost $5,200 Total Present Worth Cost $70,000	Capital Cost $8,000,000 Average Annual O&M Cost $77,000 Total Present Worth Cost $9,100,000	Capital Cost $20,100,000 Average Annual O&M Cost $195,000 Total Present Worth Cost 22,800,000	Capital Cost $51,800,000 Average Annual O&M Cost $195,000 Total Present Worth Cost $54,500,000	Capital Cost $112,200,000 Average Annual O&M Cost $0 Total Present Worth Cost $112,200,000

*For a detailed listing and analysis of key ARARS, see Appendix D.

ROD Table 58

Table 59 summarizes the relative performance of the remedial alternatives summarized narratively in the following sub-parts. The numerical ranking in Table 59 attempts to provide a relative relationship, on a scale of 1-4, of each alternative's performance under each criteria. The higher the number, the better the rating of that alternative for the criterion under consideration (i.e., 1 is the least favorable)). Some alternatives are deemed basically equivalent for certain criterion and carry the same rating.

TABLE 59: COMPARATIVE ANALYSIS OF REMEDIAL ALTERNATIVES

Criteria	No Further Action (1)	Soil Cover with Excavation and Offsite Disposal (2)	Shallow Excavation, Offsite Disposal and Soil Cover (3)	Deep Excavation and Offsite Disposal (4)
1. Overall Protectiveness	1	2	3	4
2. Compliance with ARARS	1	2	3	3
3. Long-Term Effectiveness and Permanence	1	2	3	4
4. Reduction of Toxicity, Mobility, or Volume	1	2	3	4
5. Short-Term Effectiveness	1	4	3	2
6. Implementability	4	3	2	1
7. Present Worth Cost	$70,000 (F) $70,000 (C) $70,000 (L)	$13,200,000 (F) $21,400,000 (C) $9,100,000 (L)	$22,500,000 (F) $29,500,000 (C) $22,800,000 (L3a) $54,500,000 (L3b)	$24,200,000 (F) $29,700,000 (C) $112,200,000 (L)

(F) - Forest Street (C) - 5th & Cleveland (L) - Lonnie C. Miller, Sr. Park

8.2 Threshold Criterion 1 - Overall Protection of Human Health and the Environment

Overall protection of human health and the environment addresses whether each alternative provides adequate protection of human health and the environment and describes how risks posed through each exposure pathway are eliminated, reduced or controlled through treatment, engineering controls and/or institutional controls.

All of the alternatives, except the no-action alternative, are protective of human health and the environment by eliminating, reducing, or controlling risks posed by the Site through removal (and treatment where needed) of contaminated soil, engineering controls (i.e., soil cover), and/or

institutional controls. Alternatives 2 and 3 are similar in their overall protectiveness because potential risks related to exposure to the contaminated soils are eliminated, reduced or managed and risks related to erosion of ash to creek and river banks are eliminated or reduced.

Alternative 3 (Shallow Excavation, Offiste Disposal and Soil Cover) is considered preferable toAlternatives 1 and 2 in terms of overall protection because it provides a thicker barrier of soil (i.e., 2 feet in Alternative 3 versus 0.5 feet in Alternative 2) to minimize the potential for risks related to exposure to subsurface soil contamination or accumulation of chemicals in vegetables · for those who garden. In addition, Alternative 3's requirement for up to 2 feet removal of contaminated soil residential areas would greatly increase the amount of contaminated soil removed from a particular piece of property, maybe even leading to the removal of all the contamination on a particular parcel except that which might exist under more permanent structures like houses, driveways, etc.

Because less contaminated soil is removed (or a thinner soil cover is utilized), Alternative 2 (Soil Cover with Excavation and Offsite Disposal) may pose increase risks related to digging activities in residential setting when compared to Alternative 3 (Shallow Excavation, Offsite Disposal and Soil Cover). However, the risks of uninformed large digging or construction operations under either Alternative 2 or 3 (or 4) should be manageable through Institutional Controls.

While Alternative 4 (Deep Excavation and Offsite Disposal) removes the greatest amount of soil exceeding RGs, this reduction in residual risk is counterbalanced by an increase in risks to the community during the extended construction period and the substantial truck traffic that would occur. These risks related to construction could be significant and would have to be actively managed. Dust control efforts will be important because nearly all the ash with high concentrations of lead will be excavated, loaded into trucks and transported offsite. The potential for vehicle or pedestrian accidents is much higher for Alternative 4 (Deep Excavation and Offsite Disposal) in relation to the other alternatives because of the estimated number of trucks to be loaded and driven through the surrounding neighborhoods during Alternative 4's the construction period.

Alternatives 3 and 4 would significantly eliminate or reduce the risk to both human health and the environment, possibly even lessening the area in need of ongoing Institutional Controls once remediation is complete.

All remedial alternatives (except Alternative 1) are deemed protective of Human Health and the Environment (i..e, Threshold Criteria 1 is met). The No Action Alternative will not meet any of the cleanup criteria, and will not be discussed in detail in the below text.

8.3 Threshold Criterion 2 - Compliance with Applicable or Relevant and Appropriate Requirements

Section 121(d) of CERCLA and NCP §300.430(f)(1)(ii)(B) require that remedial actions at CERCLA sites at least attain legally applicable or relevant and appropriate Federal and State requirements, standards, criteria, and limitations, which are collectively referred to as "ARARs," unless such ARARs are waived under CERCLA section 121(d)(4).

Applicable requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal environmental or State environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those State standards that are identified by a state in a timely manner and that are more stringent than Federal requirements may be applicable. Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal environmental or State environmental or facility siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well-suited to the particular site. Only those State standards that are identified in a timely manner and are more stringent than Federal requirements may be relevant and appropriate.

Compliance with ARARs addresses whether a remedy will meet all of the applicable or relevant and appropriate requirements of other Federal and State environmental statutes or provides a basis for invoking waiver. Part 11.2 contains a more in-depth listing of the Site's ARARs.

None of the identified ARARs are expected to hinder implementation of Alternatives 3 and 4 to the point where the alternative cannot be pursued. Alternative 2 (Soil Cover with Excavation and Offsite Disposal) would not meet the FAC 62-785 Brownfield Cleanup Criteria for a minimum of 2 feet of soil meeting residential cleanup criteria because Alternative 2 (Soil Cover with Excavation and Offsite Disposal) provides only a minimum of 0.5 feet of cover soil rather than 2 feet. However, this 2 foot minimum is considered a to-be-considered (TBC) and not an ARAR.

8.4 Balancing Criterion 3 - Long-Term Effectiveness and Permanence

Long-term effectiveness and permanence refers to expected residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time, once clean-up levels have been met. This criterion includes the consideration of residual risk that will remain onsite following remediation and the adequacy and reliability of controls.

Each alternative, except the No Action alternative, provides some degree of long-term protection. However, all alternatives result in varying amounts of soil remaining that exceed the RGs. For example, there is an estimated 227,000 cubic yards (cys) of contaminated soil at Forest Street, 240,000 cys of soil at 5th & Cleveland, and 856,000 cys of soil at Lonnie C. Miller Park above the water table that would remain under the No Action Alternative. Alternative 2 (Soil Cover with Excavation and Offsite Disposal) would result in removal of about 53,000 cys, leaving approximately 174,000 cys at Forest Street, removing 65,000 cys leaving approximately 175,000 cys at 5th & Cleveland, and removing 24,000 cys leaving approximately 832,000 cys at Lonnie C. Miller Park. Alternative 3 (Shallow Excavation, Offiste Disposal and Soil Cover) would result in a residual volume of about 96,000 cys at Forest Street, 100,000 cys at 5th & Cleveland and 763,000 cys (Alternative 3a, two foot cover) and 528,000 cys (Alternative 3b, two foot excavation) at Lonnie C. Miller Park. Alternative 4 (Deep Excavation and Offsite Disposal) would leave approximately 91,000 cys at Forest Street, 95,000 cys at 5th & Cleveland, and 21,000 cys at Lonnie C. Miller Park below roadways, buildings, driveways and sidewalks.

Alternatives 2, 3, and 4 all rely on Institutional Controls to prevent or manage excavation of subsurface soil exceeding RGs and subsequent spreading on the surface where long-term exposure could occur. Alternative 4 (Deep Excavation and Offsite Disposal) offers the greatest long-term effectiveness because, for the most part, it's reliance on Institutional Controls would be for soils that are already greatly isolated from the potential for exposure (i.e., below buildings, roadways, driveways, sidewalks, asphalt or concrete which maintains a break in the exposure pathway).

Alternative 2 (Soil Cover with Excavation and Offsite Disposal) is the least favorable in terms of long term effectiveness because it provides for only 0.5 feet of cover soil. However, the Institutional Controls for Alternative 2 (Soil Cover with Excavation and Offsite Disposal) are still considered adequate and reliable because only commercial construction contractors would have the equipment to engage in the amount of excavation that could result in enough subsurface soil to be spread on the surface to pose a substantial potential risk if not managed properly. These contractors would be notified of the requirements for excavation and proper disposal of soils through the construction permit process (i.e., one of the Institutional Control measures).

In contrast to the Institutional Controls which should be able to address commercial digging within the area of remaining subsurface contamination, it would be more difficult to ensure proper excavation of soils below either 0.5 feet (Alternative 2) or 2 feet (Alternative 3) by individual residents. However, these activities would typically be for small excavations such as planting bushes or installing posts, that would not result in substantial potential risk if the soil were dispersed on the surface. Alternative 2 (Soil Cover with Excavation and Offsite Disposal) would require some targeted deeper excavations based on land use to minimize risks (e.g., a deeper 2 foot soil cover in garden and playground areas.

In the following order, Alternatives 2, 3 and 4 provide an increasing degree of permanent reduction in risk and decreasing amount of residual risk after cleanup. It is believed that Alternative 4 (Deep Excavation and Offsite Disposal) provides the best long term effectiveness and permanence.

8.5 Balancing Criterion 4 - Reduction of Toxicity, Mobility, or Volume Through Treatment

Reduction of toxicity, mobility, or volume through treatment refers to the anticipated performance of the treatment technologies that may be included as part of a remedy.

Instead of using an active treatment method, Alternatives 2, 3 and 4 address the threat of contaminated soil by breaking the exposure pathway. In order to accomplish the breaking of the exposure pathway, soil excavation (with offsite disposal) will occur in many locations. Toxicity Characteristic Leaching Procedures (TCLP) test data collected during the RI suggest that about 10% of the soil exceeding the RGs will fail the TCLP limit for lead and require solidification pursuant to RCRA treatment standard requirements at 40 CFR §268 prior to offsite disposal. In other words, if TCLP testing finds the soil to be hazardous waste under RCRA, then treatment (i.e., stabilization/solidification) is needed prior to land disposal. As a result, it is estimated that Alternatives 2, 3 and 4 will treat an estimated 5,000, 13,000 and 15,000 cys of soil, respectively at Forest Street, 6,500, 14,000 and 14,500 cys of soil, respectively at 5th & Cleveland, and 2,400,

9,300 (Alternative 3a), 328,400 (Alternative 3b), and 835,000 cys of soil, respectively at Lonnie C. Miller, Sr., Park. Solidification does not destroy the lead; therefore, it is a reversible process. However, the treated soil would be isolated in an appropriate landfill and would not be expected to leach to groundwater over the long-term.

Solidification pursuant to RCRA treatment standard requirements at 40 CFR §268 will reduce the mobility of the contaminants; however, the volume is actually increased with the solidification materials. Therefore, the toxicity may be considered reduced proportionally over the increased volume, but the amount of contamination is not reduced.

All of the alternatives will, as needed, reduce the toxicity, mobility or volume of the contaminants. Although all of the alternatives would use basically the same treatment process if the need for treatment is triggered, because of the greater volume of material potentially available for treatment, Alternative 4 (Deep Excavation and Offsite Disposal) provides the largest potential for reduction of toxicity, mobility and volume of contaminants.

8.6 Balancing Criterion 5 - Short-Term Effectiveness

Short-term effectiveness addresses the period of time needed to implement the remedy and any adverse impacts that may be posed to workers, the community and the environment during construction and operation of the remedy until RGs are achieved.

Because there would be no remedial construction activities associated with Alternative 1 (No Action Alternative), this alternative has the least short-term construction impacts. The other alternatives would include construction activities with varying levels of impacts to construction workers, the community and the environment. The amount of impact is proportional to the amount of excavation of contaminated soil and the amount of truck traffic through the neighborhoods. The estimated number of truck loads of soil, trucks per day and the duration of construction are estimated as follows:

Forest Street

1. Alternative 2 - 14,000 truck loads, 23 trucks/day, 20 months construction
2. Alternative 3 - 34,000 truck loads, 41 trucks/day, 27 months construction
3. Alternative 4 - 39,000 truck loads, 47 trucks/day, 27 months construction

5th & Cleveland

4. Alternative 2 - 17,000 truck loads, 16 trucks/day, 34 months construction
5. Alternative 3 - 36,000 truck loads, 26 trucks/day, 45 months construction
6. Alternative 4 - 37,000 truck loads, 27 trucks/day, 45 months construction

Lonnie C. Miller Park

7. Alternative 2 - 14,000 truck loads, 38 trucks/day, 12 months construction
8. Alternative 3a - 55,000 truck loads, 75 trucks/day, 24 months construction
9. Alternative 3b - 86,000 truck loads, 110 trucks/day, 26 months construction
10. Alternative 4 - 217,000 truck loads, 222 trucks/day, 32 months construction

Alternative 4 (Deep Excavation and Offsite Disposal) would have by far the greatest impact to the community during the estimated month construction period. Alternatives 2 and 3 have considerably less impact to the community. Potential impacts to workers can be minimized through adherence to proper health and safety requirements during excavation and cover activities. Likewise impacts to the environment can be minimized through mitigative measures such as use of silt fences to control erosion and watering of dry soils to minimize dust generation. Potential environmental impacts are most likely during bank stabilization of creek and rivers. Alternatives 2, 3 and 4 incorporate the same bank stabilization measures. It is believed that Alternative 2 (Soil Cover with Excavation and Offsite Disposal) would provide the most cleanup advantage relative to short-term effectiveness.

8.6 Balancing Criterion 6 - Implementability

Implementability addresses the technical and administrative feasibility of a remedy from design through construction and operation. Factors such as availability of services and materials, administrative feasibility, and coordination with other governmental entities are also considered.

Excavation and placement of soil covers on residential properties will require extensive coordination with local community officials and individual residents. Alternatives 2 through 4 have the same implementability concerns relative to the substantial coordination because all three alternatives will target similar numbers of residential properties. The availability of local landfill capacity would be strained with implementation of Alternative 4 (Deep Excavation and Offsite Disposal) because of the large volume of soil to be disposed (approximately 1,323,000 cys).

Since Alternative 1 (No Action Alternative) is already implemented, it would be the easiest to implement. However, of the active alternatives, Alternative 2 (Soil Cover with Excavation and Offsite Disposal) would probably be the easiest to implement because this alternative has the smaller volume of soil to be removed.

8.7 Balancing Criterion 7 - Cost

The estimated costs for each alternative are in Section 7.3 and Tables 56, 57, 58 and 59.

The cost estimates presented above have been developed strictly for comparing the four alternatives. The final costs of the project and the resulting feasibility will depend on actual labor and material costs, competitive market conditions, actual site conditions, final project scope, the implementation schedule, the firm selected for final engineering design, and other variables. For example, cost estimates in the Feasibility Study included parcels which were assumed to be contaminated based on sampling results from adjacent parcels because access was not being granted for sampling. Additional sampling during the Remedial Design or Remedial Action may change the number of parcels needing remediation. Therefore, final project costs will vary from the cost estimates. Because of these factors, project feasibility and funding needs must be reviewed carefully before specific financial decisions are made or project budgets are established to help ensure proper project evaluation and adequate funding.

The cost estimates are order of magnitude estimates having an intended accuracy range of +50 to -30 percent. The range does not account for changes in the scope of the alternatives. The

specific details for remedial actions and cost estimates would be refined during final design.

A cost sensitivity analysis was performed to evaluate the effect of differing discount rates and volumes of contaminated media. Many other factors that have substantial uncertainty can also effect the present worth costs of alternatives but they are not as significant as the factors listed above. Remedy failure and its potential to require additional remedial work in future years is not significant at this site because the primary technologies are excavation and covering which are not technologies that are likely to fail. The project duration is also not likely to greatly effect the relative costs between alternatives because the duration would likely vary by only a few years at most.

Discount rates were varied because they effect the present work costs of operation and maintenance (O&M). Tables 60, 61 and 62 presents the effects of varying discount rates. The 7% discount rate was used to compute the present worth of the remedy alternatives.

8.8 Modifying Criterion 8 - State/Support Agency Acceptance

See Part 10 of the ROD

8.9 Modifying Criterion 9 - Community Acceptance

See Part 13 of the ROD

8.10 Principal Threat Wastes

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (NCP §300.430(a)(1)(iii)(A)). Identifying principal threat waste combines concepts of both hazard and risk. In general, principal threat wastes are those source materials considered to be highly toxic or highly mobile, which generally cannot be contained in a reliable manner or would present a significant risk to human health or the environment should exposure occur.

The contaminated soils at the Jacksonville Ash Site are not considered to be "principal threat wastes" because the COCs are not found at highly toxic concentrations that pose a significant risk to either human or ecological receptors and the contaminated soil can be reliable contained.

TABLE 5-4
Cost Sensitivity of Discount Rates
Forest Street Incinerator Site
Jacksonville Ash Feasibility Study, Revision 1

Alternative	Total Present Worth Costs 3% Discount Rate ($)	Total Present Worth Costs 7% Discount Rate ($)	Total Present Worth Costs 10% Discount Rate ($)
Alternative 1–No Further Action	$130,000	$70,000	$50,000
Alternative 2–Soil Cover with Excavation and Offsite disposal	$13,600,000	$13,200,000	$13,100,000
Alternative 3–Shallow Excavation, Offsite Disposal, and Soil Cover	$23,300,000	$22,500,000	$22,200,000
Alternative 4–Deep Excavation and Offsite Disposal	$24,200,000	$24,200,000	$24,200,000

ROD Table 60

TABLE 6-3
Cost Sensitivity of Discount Rates
5th & Cleveland Incinerator Site
Jacksonville Ash Feasibility Study, Revision 1

Alternative	Total Present Worth Costs 3% Discount Rate ($)	Total Present Worth Costs 7% Discount Rate ($)	Total Present Worth Costs 10% Discount Rate ($)
Alternative 1–No Further Action	$130,000	$70,000	$50,000
Alternative 2–Soil Cover with Excavation and Offsite disposal	$21,900,000	$21,400,000	$21,300,000
Alternative 3–Shallow Excavation, Offsite Disposal, and Soil Cover	$29,900,000	$29,500,000	$29,400,000
Alternative 4–Deep Excavation and Offsite Disposal	$29,700,000	$29,700,000	$29,700,000

ROD Table 61

TABLE 7-3
Cost Sensitivity of Discount Rates
Lonnie C. Miller, Sr. Park Site
Jacksonville Ash Feasibility Study, Revision 1

Alternative	Total Present Worth Costs 3% Discount Rate ($)	Total Present Worth Costs 7% Discount Rate ($)	Total Present Worth Costs 10% Discount Rate ($)
Alternative 1–No Further Action	$130,000	$70,000	$50,000
Alternative 2–Soil Cover with Excavation and Offsite disposal	$10,000,000	$9,100,000	$8,800,000
Alternative 3a–Shallow Excavation, Offsite Disposal, and Soil Cover	$25,100,000	$22,800,000	$22,000,000
Alternative 3b–Shallow Excavation, Offsite Disposal and Backfill of Soil Cover	$56,800,000	$54,500,000	$53,700,000
Alternative 4–Deep Excavation and Offsite Disposal	$112200,000	$112,200,000	$112,200,000

ROD Table 62

PART 9: SELECTED REMEDY

9.1 Remedial Action Objectives and Cleanup Levels

The RAOs for the Jacksonville Ash Site are as follows:

- Prevent human exposure to site COCs through contact, ingestion, or inhalation of soil contaminated from incinerator ash disposed at the Jacksonville Ash Site with a carcinogenic risk greater than 1×10^{-6} (i.e., one in a million), with a noncarcinogenic hazard index greater than 1 and lead in excess of 400 mg/kg.
- Prevent impacts to terrestrial biota from exposure to surface soils contaminated from incinerator ash disposed at the Jacksonville Ash Site and containing chemicals of potential ecological concern (COPECs) in excess of preliminary ecological Remedial Goals (RGs) and soil background concentrations.[6]
- Prevent impacts to aquatic communities and viable insectivore (insect eating) and piscivore (fish eating) communities at all three properties from exposure to sediment contaminated from incinerator ash at the Jacksonville Ash Site and containing chemicals of potential ecological concern (COPECs) in excess of ecological Preliminary Remediation Goals (PRGs) and sediment background concentrations.[7]
- Control erosion and transport of soils containing visible ash, lead in excess of 400 mg/kg or COPECs in excess of preliminary ecological RGs along the banks of creeks and rivers to prevent possible unacceptable risks to human health or ecological impacts.
- Place geotextile (or other membrane) topped with gravel under residential houses with open crawlspaces (that can be accessed by children) with exceedences of human health RGs to further prevent direct contact with the soil.[8]
- Institute groundwater monitoring to verify the "No Action" decision for the groundwater. CERCLA 5 year Reviews of post-remedial groundwater monitoring will be used to determine effectiveness of this site specific source removal in reducing groundwater contaminant levels and the potential for discharge to surface water. [8]

Remedial Goals (RGs) for residential soil exposure, industrial soil exposure and ecological soil and sediment were identified which meet the above RAOs (see Tables 51, 52, 53 and 54). Figures 16, 17 and 18 indicates the properties known (or suspected) to need remediation. This figure includes some assumed contaminated parcels based on their location relative to known contaminated parcels. As mentioned in Part 3.2, some properties are in need of RI Phase III

[6] Cleanup to satisfy the human health RGs will also provide adequate cleanup to protect ecological receptors (i.e., separate actions to address ecological risk in soil is not needed).

[7] Exceedences of ecological sediment PRGs in stream sediments have been found to be similar to sediment background concentrations upstream of the sites. No active remediation of the stream sediment is required.

[8] Geotextile with gravel in open crawlspaces and groundwater monitoring were not part of the remedies submitted in the Feasibility Study. EPA has added these RAOs in response to concerns by Florida Department of Environmental Protection and community members.

sampling. Basically, the RI Phase III sampling is of properties not previously sampled (mainly due to failure to obtain access) or properties in need of re-sampling because information on constituent concentrations is incomplete. The third round of RI sampling begins collection of information needed for quicker implementation of the cleanup once the remedy is selected. Information collected during RI Phase III will be used to further refine areas needing remediation, but will not alter the cleanup approach selected in this ROD. Any properties identified in RI Phase III as needing remediation will be addressed in a manner consistent with the selected remedy.

9.2 Selected Remedy

EPA has divided the Site into two Operable Units. The remediation of both Operable Units is covered by the RAO and RGs contained within this ROD. Based upon consideration of the requirements of CERCLA, the NCP, the detailed analysis of alternatives, and public and state comments, the selected remedy for the Forest Street and 5th & Cleveland sites is Alternative 3 (Shallow Excavation, Offsite Disposal and Soil Cover) and Alternative 3a for the Lonnie C. Miller, Sr. Park. This alternative was the remedy proposed in the July 2005 Proposed Plan with the following clarification that removal of soils above RGs up to 2 feet and installation of the a soil cover is the remedy in residential areas. Installation of a soil cover in residential areas without excavation will only be considered in special circumstances such as where both of the following conditions are met:

- storm water drainage, surface grade conditions and surrounding aesthetics (i.e, no isolated mounds) allow installation of the 2 foot thick soil cover without excavation, and
- contamination does not exist in the upper surface soil (e.g., top foot and ½ or 2 feet) but contamination does exist at depths greater than 2 feet (i.e., excavation will not remove all of the contaminated soil exceeding RGs).

9.2.1 Summary of the Rationale for the Selected Remedy (Soil)

The Selected Remedy for soil is Alternative 3 and Alternative 3a for Lonnie C. Miller, Sr. Park (Shallow Excavation, Offsite Disposal and Soil Cover). Alternatives 3 and 4 both significantly reduce the risks to human and ecological receptors. However, Alternative 3 (Shallow Excavation, Offiste Disposal and Soil Cover) is significantly less expensive than Alternative 4 (Deep Excavation and Offsite Disposal), and the risk reduction benefit gained by excavating more soil in Alternative 4 (Deep Excavation and Offsite Disposal) relative to the removal planned for Alternative 3 (Shallow Excavation, Offiste Disposal and Soil Cover) is not deemed significant. In comparing Alternative 3 to Alternative 2, there was concern that Alternative 2's reliance on just a ½ foot of cover may not be sufficient over the long term.

9.3 Description of the Selected Remedy

A Remedial Design will be conducted prior to implementation. However, the following is an outline of the selected remedy. Implementation of Alternative 3 (Alternative 3a for Lonnie C. Miller, Sr. Park) will include the following major actions to meet the RGOs and the associated RGs (i.e., cleanup levels):

Implementation of Alternative 3 (Alternative 3a for Lonnie C. Miller, Sr. Park) would include the following actions to address soil *which exceeds residential RGs*:

Residential Property

- Prevention of human exposure to surface soil above RGs on properties zoned for residential use is provided by removal of soil above RGs in the upper two feet and installation of a soil cover. Excavated soil will undergo stabilization/solidification pursuant to RCRA treatment standards requirements at 40 CFR §268 before off-site disposal at an appropriate Subtitle D landfill if it is found to be a hazardous waste by TCLP testing. Soil excavations in yards poses some very site-specific issues. Here are some examples of the types of site-specific issues the Remedial Design will have to address:
  - Excavation of less than 2 feet is to be allowed adjacent to the foundation of buildings and other structures and around the base of trees.
  - Removal of trees is to be optional in that large trees can remain undisturbed unless the property owner desires to have the tree removed for remediation purposes.
  - Excavation is to require removal of small yard vegetation and structures (e.g., bushes, small sheds, etc.) unless property owner specifically requests that such vegetation or structures remain undisturbed.
- Prevention of potential human exposure to subsurface soil above RGs below 2 feet is provided by installation of the 2 foot thick soil cover and Institutional Controls. Subsurface soil remaining above RGs will be marked by a warning mesh or fabric (i.e., snow fencing, etc.) to indicate the presence of contamination. Where practical, excavation below 2 feet is to be allowed to lesson or eliminate the need for Institutional Controls.
- Place geotextile (or other membrane) topped with gravel under residential houses with open crawlspaces (that can be accessed by children) with exceedences of human health RGs to further prevent direct contact with the soil.
- Prevention of potential human exposure to the contaminated soil footprint above RGs under existing buildings, roads, driveways, sidewalks, asphalt, or concrete which maintain a break in the exposure pathway is provided by Institutional Controls.
- Temporary Relocation will be offered to eligible residents prior to excavation. Any Temporary Relocation will follow the *Superfund Response Actions: Temporary Relocation Guidance* (OSWER Directive 9230.0-97, April 2002).

Non-Industrial Properties (Parks, school yards, etc)

Non-Industrial Properties are properties that by their use require residential clean up but are not residential properties. Examples of these properties are school yards and parks where there is possible frequent exposure to the soil by children.

- Prevention of human exposure to surface soil above RGs by removal of the upper 2 feet of soil as needed to allow for installation of a 2 feet soil cover. Excavated soil will undergo stabilization/solidification pursuant to RCRA treatment standards requirements at 40 CFR §268 before off-site disposal at an appropriate Subtitle D landfill if it is found to be a hazardous waste by TCLP testing. Excavation of less than 2 feet is to be allowed adjacent to the foundation of buildings and other structures and around the base of trees.
- Prevention of potential human exposure to subsurface soil below 2 feet by installation of

2 foot thick soil cover and Institutional Controls. Subsurface soil remaining above RGs will be marked by a warning mesh or fabric (i.e., snow fencing, etc.) to indicate the presence of contamination.

- Prevention of potential human exposure to the soil footprint under existing buildings, roads, driveways, sidewalks, asphalt, or concrete which maintain a break in the exposure pathway by Institutional Controls.

Implementation of Alternative 3 (Alternative 3a for Lonnie C. Miller, Sr. Park) would include the following actions to address soil, *which exceeds industrial RGs,* in industrial settings:

Industrial Property (including Residential Property designated to be redeveloped for Industrial Use)

- Prevention of human exposure to surface soil above RGs on properties zoned industrial and on residential property designated to be redeveloped for industrial use is provided by the presence of or installation of a barrier (e.g., building, roadway, driveway, sidewalk, asphalt, concrete or soil cover which maintain a break in the exposure pathway) with soil removal as needed to provide minimum 2 feet of clean cover.
- Prevention of potential human exposure to subsurface soil above RGs below 2 feet is provided by installation of the 2 foot thick soil cover and Institutional Controls. Subsurface soil remaining above RGs will be marked by a warning mesh or fabric (i.e., snow fencing, etc.) to indicate the presence of contamination.
- Prevention of potential human exposure to the soil footprint above RGs under existing buildings, roadway, driveway, sidewalk, asphalt, concrete or soil cover which maintain a break in the exposure pathway) is provided by Institutional Controls.
- Prevention of potential future human exposure to the upper 2 feet of surface soil exceeding residential RGs from a change in land use is provided by Institutional Controls.

Some residential property designated to be redeveloped for industrial use is identified in the City of Jacksonville enacted Ordinance 2003-892E on August 12, 2003. This Ordinance requires all development in the area of Forest Street Incinerator (and areas outside the site) to follow the North Riverside Action Plan (NR Action Plan) developed with the help of the North Riverside Community Development Corporation (TAP Community Group) and area business owners. The Ordinance and the NR Action Plan are included in Appendix E of this ROD along with zoning maps of the three properties. Some areas of the Forest Street site will change to light industrial/commercial to create a buffer between residential housing (which in some areas is dispersed among light industrial buildings) and commercial properties. The residential houses in the converted areas will be removed from the commercially zoned areas. This is discussed in Section 7 of the NR Action Plan in Appendix E of this ROD.

Implementation of Alternative 3 would include the following actions to control erosion and transport of contaminated bank soils into creeks and rivers:

Creek and Rivers

- Stabilization of the banks of McCoy's Creek, Ribault River and Hogan's Creek (e.g.,

clear banks, excavate soil to achieve acceptable side slopes, dispose of excavated soil/material pursuant to RCRA treatment standards requirements at 40 CFR §268 before off-site disposal at an appropriate Subtitle D landfill, installation of erosion controls to prevent erosion of ash/contamination into creek, etc.). Acceptable side slopes and other design elements for bank stabilization will be determined in remedial design by professional engineers.

All actions which require any combination of cover installation and/or soil excavation include restoration activities (e.g., replacement of flower beds, trees, shrubs, grass, etc.). All actions that require excavation will also require characterization of the excavated soil to determine proper disposal (i.e., determination if the soil is hazardous or not hazardous from a disposal standpoint).

Temporary relocation will be provided to eligible residents upon their request.

9.3.1 Institutional Controls

EPA Institutional Controls (ICs) guidance (EPA 2000) recommends four specific factors be considered when documenting the ICs to be implemented at a Site: Objective, Mechanism, Timing and Responsibility. The following is a listing of these factors relative to the Jacksonville Ash Site.

1. **Objective:** The objective of the Institutional Controls is to assist the active portion of the selected remedy (i.e., the cover/excavation portion) in preventing and/or managing potential human exposure to subsurface soil contamination remaining above RGs (e.g., *under buildings, at depths greater than 2 feet in yards, under asphalt, etc.). The* Institutional Controls will also keep property remediated to industrial RGs from reverting to another use designation (e.g., residential) without proper remediation to satisfy the proposed non-industrial use.

2. **Mechanism:** The remedy relies on Institutional Controls to direct and control human behavior to eliminate or manage exposure to soil contamination remaining at the Site. Institutional Controls are non-engineered instruments, such as administrative and/or legal controls, that help to minimize and/or manage the potential for human exposure to contamination and/or protect the integrity of a remedy. The following are general explanations of the four categories of Institutional Control mechanisms available for use followed by those controls to be used for the Jacksonville Ash Site:

   - *Proprietary Controls* - These controls are based on State law and use a variety of tools to prohibit activities that may compromise the effectiveness of the remedy or restrict activities or future uses of resources that may result in unacceptable risk to human health or the environment. They may also be used to provide site access for operation and maintenance activities. The most common examples of proprietary controls are easements and covenants.

   - *Governmental Controls* - These controls impose land or resource restrictions using the authority of an existing unit of government. Typical examples of governmental controls include zoning, building codes, drilling permit requirements and State or local groundwater use regulations.

- *Enforcement and Permit Tools with IC Components* - These types of legal tools include orders, permits, and consent decrees. These instruments may be issued unilaterally or negotiated to compel a party to limit certain site activities as well as ensure the performance of affirmative obligations (e.g., to monitor and report on an IC's effectiveness).

- *Informational Devices* - These tools provide information or notification about whether a remedy is operating as designed and/or that residual or contained contamination may remain on Site. Typical information devices include State registries, deed notices, and advisories.

For the Jacksonville Ash Site, Institutional Controls, including some or all of the following, will be used:

a. *Proprietary Control* - Any land owned by the City that has contamination remaining at depth (> 2 feet) or under houses, concrete driveways, will have restrictions placed on the deed via restrictive covenants that run with the land to notify future interested parties or owners of the presence of contaminated soil and of the requirement to maintain the soil cover or barrier (e.g., building, roadways, driveways, sidewalks, asphalt or concrete which maintain a break in the exposure pathway). Any private property owner that has contamination remaining at levels above RGs at depth or under their house, concrete driveways, sidewalks, etc. which maintain a break in the exposure pathway will be offered the opportunity to and be assisted with setting up a proprietary control for their property.

b. *Governmental Controls:* The City of Jacksonville will establish Governmental Controls under its administrative authorities with the expressed intent to prevent and/or manage future human contact with subsurface (> 2 feet) or sub-structure contaminated soil. Implementation of at least one of the Governmental Controls should be analogous to the Aquifer Delineation Zone Program in Florida (Chapter 62-524). For example, the Aquifer Delineation Zone Program identifies a zone of groundwater contamination. When a permit application (e.g., well installation) is received, the application is checked against existing Aquifer Delineation Zones in that area. If the application is for a well within that zone, then certain well construction requirements are applied to ensure that contaminated groundwater does not enter the well (e.g., double casing of wells, ensuring the recovery zone is not within the contaminated zone, etc.). Similarly, the City of Jacksonville, in consultation with EPA, will identify a Jacksonville Ash Soil Delineation Zone for that area where soil contamination remains at depth after covering/excavation. When the City receives an application for an activity within the Jacksonville Ash Soil Delineation Zone (e.g., to dig for utilities, to build a house, to tear down a house, to add on to a house, to install a swimming pool, to dig a basement, to repair roads, etc.), then that application must be flagged and appropriate restrictions or appropriate management scheme applied prior to approval of the application.

Regarding the management scheme to be applied in the Soil Delineation Zone, the existing Ash Management Plan must be finalized and adopted as part of the Institutional Control. The Ash

Management Plan is envisioned to be one of the main management tools when digging within the Jacksonville Ash Soil Delineation Zone. The City's Ash Management Plan must include, at a minimum, procedures:

i. for identification of Ash,
ii. for notifications to City and regulatory officials if Ash is encountered,
iii. for handling, storing and characterizing Ash for proper disposal, transporting Ash,
iv. on minimum requirements for documenting Ash handling and disposal activities, and
v. tips to reduce exposure to contaminated soils.

The City of Jacksonville will also identify and work with other governmental permitting authorities (e.g., St. Johns River Water Management District, Army Corp of Engineers, etc.) to establish a procedure to ensure that appropriate restrictions or appropriate management scheme is applied prior to approval of an application by the other governmental authority which could impact soil contamination remaining in the Soil Delineation Zone.

d. *Information Device* - Any property owner that has contamination remaining at depth or under their house, concrete driveways, etc., will be offered the opportunity to and be assisted with drafting language that can be included in a homeowner's deed to notify potential buyers of contamination and/or restrict future activities of the property so as to maintain the soil cover.

3. **Timing:** The Institutional Controls must be explained in the Remedial Design (RD) and the Operations and Maintenance (O&M) Plan. These controls must stay in place as long as subsurface soil contamination remains at levels above RGs.

4. **Responsibility:** The City of Jacksonville is responsible for implementing and, where possible given the Institutional Control instrument, enforcing the above identified Institutional Controls. O&M Reports or similar status reports such as an IC Implementation Report, that summarizes all ICs implemented for the Site including mapping of all areas with soil above RGs left in place, location and type of ICs, deficiencies of the ICs, and other information as needed, will be prepared by the City of Jacksonville. EPA is responsible for monitoring (e.g., in O&M Report, in IC Implementation Report, during the 5 year reviews, etc.) the implementation and effectiveness of the Institutional Controls.

9.3.2 Risk Management Decision (Clarification of Remedy Implementation to meet Ecological Soil RGs)

Refinement of the COPECs and preliminary ecological RGs was possible. For example, many of the COPECs for soils are metals and other inorganic chemical are naturally occurring in the environment. Some of the COPECs are organic chemicals that are also naturally occurring or ubiquitous in urban environments. To determine background concentrations of COPECs, soil sampling was performed. Surface soil was collected at a total of 60 background locations samples. In many cases, the background concentration of the COPEC was above the preliminary ecological RG (e.g., aluminum, iron). EPA does not require cleanup to below background levels.

With establishment of the environmental medium of concern (soil), identification of the COPECs and determination of surface soil background concentrations, an analysis was performed in Section 2.5 of the Feasibility Study on the geographic co-location of human health COCs and ecological COPECs.

This analysis indicates that remediation of soils to human health RGs will remediate almost all of the exceedances of preliminary ecological RGs or soil background (whichever is higher). Remediation to human health RGs will remove or break the exposure pathway of a large amount of contaminated soil, thereby lowering the average concentration of ecological COPECs at the Site.

Due to the relatively low quality ecological habitat offered by urbanized settings, the ubiquitous nature of many of the ecological COPECs and the conservative nature of the preliminary ecological RGs, it is believed that those locations not targeted for soil cleanup to protect human health will not result in substantive remaining ecological risk and do not warrant establishment of specific ecological RGs. The overall conclusion is that cleanup to satisfy the human health RGs will also provide adequate cleanup to protect ecological receptors (i.e., separate actions to address ecological risk in soil is not needed).

9.3.3 Risk Management Decision ((Clarification of Remedy Implementation to meet Ecological Sediment RGs)

The analytical results of sediment in McCoy's Creek (Forest Street) and Ribauld River (Lonnie C. Miller, Sr. Park) indicate some exceedences of the preliminary ecological remedial goals. However, exceedences of ecological sediment RGs in stream sediments next to the sites have been found to be similar to sediment background concentrations upstream of the sites. This evaluation in Section 2.5 of the Feasibility Study indicates that the sites have not significantly contaminated the sediment above levels already present in the surface water bodies. No active remediation of the creek or river sediment is required, although the banks will be stabilized to prevent erosion of ash into the surface water bodies.

EPA recognizes that a separate resolution between the PRP and FDEP or any other regulatory agencies is possible, whereby the multiple sources resulting in elevated levels of contaminants in the streams and in groundwater contaminant discharge to surface water will be addressed in a venue separate from the CERCLA remedy.

9.4 Summary of the Estimated Remedy Costs

Costs for Alternative 3 Including Alternative 3a for Lonnie C. Miller, Sr. Park Site

Capital Cost:	$21,600,000 (F)
	$29,100,000 (C)
	$20,100,000 (L)
Total All Three Sites:	**$70,800,000**

Average Annual O&M Cost:	$65,000 (F)
(50 Years of O&M)	$31,000 (C)
	$195,000 (L)
Total All Three Sites:	**$291,000**
Total Present Worth:	$22,500,000 (F)
(7% Discount Rate)	$29,500,000 (C)
	$22,800,000 (L)
Total All Three Sites:	**$74,800,000**

The information in the above cost estimate is based on the best available information regarding the anticipated scope of the remedial alternative. Changes in the cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. Major changes may be documented in the form of a memorandum in the Administrative Record file, an ESD, or a ROD amendment. This is an order-of-magnitude engineering cost estimate having an intended range of +50 to -30 percent of the actual project cost.

9.5 Expected Outcomes of the Selected Remedy

The expected outcome is removal of complete soil exposure pathways above RGs for both human and ecological receptors.

9.6 Available Land Use after Cleanup

Residential Property

The RGs (i.e., clean-up levels) were chosen based on residential, unrestricted use scenarios. After the soil excavations are completed, the property would be available for residential, commercial or industrial uses with restrictions or management scheme (i.e., Institutional Controls) at those locations where contaminants above RGs remain at depth or under soil cover or other barriers (e.g., buildings, sidewalks, driveways, asphalt, concrete which maintain a break in the exposure pathway).

Non-Industrial Properties (Parks, school yards, etc)

The RGs (i.e., clean-up levels) were chosen based on residential, unrestricted use scenarios. After the soil excavation and installation of the 2 foot of soil cover is completed, the property would be available for residential, commercial or industrial uses with restrictions or management scheme (i.e., Institutional Controls) at locations where contaminants above RGs remain at depth or under soil cover or other barriers (e.g., buildings, sidewalks, driveways, asphalt, concrete which maintain a break in the exposure pathway).

Industrial Property (including Residential Property designated to be redeveloped for Industrial Use)

The RGs (i.e., clean-up levels) were default values for industrial scenarios. After installation of a barrier (e.g., building, asphalt, concrete or soil cover with soil removal as needed to provide minimum 2 feet of clean cover), the property would be available for commercial or industrial uses with restrictions or management scheme (i.e., Institutional Controls) at locations where contaminants above RGs remain at depth or under soil cover or other barriers (e.g., buildings, sidewalks, driveways, asphalt, concrete which maintain a break in the exposure pathway).

9.7 Anticipated Environmental and Ecological Benefits

Removal of the contaminated soil and stabilization of creek banks will eliminate the potential for contaminated run-off to enter the creeks and river.

9.8 Final Clean-up Levels

The final RGs for human exposure to soil are listed in Tables 51 and 52. The final RGs for ecological exposure to soil and sediment are listed in Tables 53 and 54.

PART 10: SUPPORT AGENCY COMMENTS

10.1 State Opinion on the Remedy (NCP §300.435(c)(2))

The State of Florida, as represented by the Florida Department of Environmental Protection (FDEP), has been the support agency during the field investigative and remedy analysis leading up to this ROD. In accordance with 40 CFR §300.435, as the support agency, FDEP has provided input during this process. FDEP does not object to the selected remedy.

On April 26, 2005 and September 12, 2005, FDEP provided comments on the Proposed Plan. A response to their comments are included in the Responsiveness Summary (see Part 13.2).

PART 11: STATUTORY DETERMINATIONS (NCP §300.430(f)(5)(ii) and (iii))

11.1 Protection of Human Health and the Environment (NCP §300.430(f)(5)(ii)(A))

The selected remedy will adequately protect human health and the environment through soil excavation and associated engineering controls (i.e., soil cover) and Institutional Controls.

Engineering Controls (2 foot Thick Soil Cover) and Excavation

Surface Soil Contamination: For both residential and industrial scenarios posing cancer risks of greater than $1x10^{-6}$ or noncarcinogenic risk greater than a Hazard Quotient of 1, soil contaminant concentrations in the upper 2 feet will be addressed. Prevention of human exposure to surface soil contamination in residential areas above RGs is provided by soil removal up to 2 feet and installation of a soil cover. In industrial areas, prevention of human exposure to surface soil contamination above industrial RGs is provided by installation of an asphalt, concrete or soil cover with soil removal as needed to provide minimum 2 feet of clean cover. Subsurface soil remaining above RGs will be marked by a warning mesh or fabric (i.e., snow fencing, etc.) to indicate the presence of contamination.

Institutional Controls

Subsurface Soil Contamination: To ensure that significant volumes of soil contamination, remaining after shallow excavation or remaining under existing structures, is not disturbed unknowingly in the future, the City of Jacksonville will place Proprietary Controls on property it owns and will impose Governmental Controls on actions taken at property within the Jacksonville Ash Soil Delineation Zone. Propriety Controls or Informational Devices will be available for private property.

11.2 Compliance with Applicable or Relevant and Appropriate Requirements (NCP §300.430(f)(5)(ii)(B))

ARARs include applicable or relevant and appropriate provisions of standards, requirements, criteria or limitations presented in the tables described below:

Chemical Specific ARARs

The primary chemical ARARS are provided in Tables 63.

Location Specific ARARs

Location specific ARARs are provided in Table 64.

Action Specific ARARs

Action specific ARARs are provided in Table 65.

TABLE 63: CHEMICAL - SPECIFIC ARARs				
Standard, Requirement, Criteria or Limitation	**Citation (certain provisions of)**	**Description**	**Federal or State ARAR**	**Comment**
Toxic Substances Control Act PCB Requirements	15 USC Sec. 2601-2629	Establishes storage and disposal requirements for PCBs. See 40 CFR Part 761, Subpart D.	Federal	PCBs are a site COC. Concentrations, however, may be below levels that require adherence to TSCA.
Clean Air Act National Primary and Secondary Ambient Air Quality Standards	42 USC Section 7401-7671	Establishes standards for ambient air quality to protect public health and welfare (including standards for particulate matter and lead). See 40 CFR Part 50.6, 50.7 and 50.12.	Federal	Relevant and Appropriate to activities which might result in air emissions during remedial actions
National Emission Standards for Hazardous Air Pollutants		Sets emission standards for designed hazardous pollutants. See 40 CFR Part 61 Subpart A	Federal	Regulates new installations that will or might reasonably be expected to become a source or indirect source of air pollution. Emissions of hazardous air pollutants is not anticipated under any alternatives.
"Global" Risk Based Corrective Action	Section 376.30701 FS	Establishes risk levels for cleanups (i.e., 1 X 10^{-6} for carcinogens and a hazard index of 1 for noncarcinogens).	State	NOTE: The only identified ARAR from Section 376.30701 and Chapter 62-780 are the risk levels.

TABLE 64: LOCATION - SPECIFIC ARARs				
Standard, Requirement, Criteria or Limitation	**Citation (certain provisions of)**	**Description**	**Federal or State ARAR**	**Comment**
Fish and Wildlife Coordination Act Regulations	33 CFR Subsection 320.3	Requires that the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and related state agencies be consulted prior to structural modification of any body of water, including wetlands. If modifications must be conducted, the regulation requires that adequate protection be provided for fish and wildlife resources.	Federal	If the remedy along Moncrief Creek involves creek alternation, these agencies would be consulted.
Endangered Species Act	16 USC Sec. 1531-1543	Requires that Federal agencies insure that any action authorized, funded, or carried by the agency is not likely to jeopardize the continued existence of any threatened or endangered species or destroy or adversely modify critical habitat. See 40 CFR 6-302(h), 50 CFR Par 200, 50 CFR Part 402	Federal	If the remedy along Moncrief Creek impacts endangered species, then this order would be followed.

TABLE 64: LOCATION - SPECIFIC ARARs				
Standard, Requirement, Criteria or Limitation	**Citation (certain provisions of)**	**Description**	**Federal or State ARAR**	**Comment**
Executive Order on Wetlands	Exec. Order 11990	Requires action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural beneficial values of wetlands	Federal	If the remedy along Moncrief Creek involves wetlands, then this order would be followed.
National Environmental Policy Act (NEPA) Regulations, Wetlands, Floodplains, etc.	40 CFR SubSection 6.301(a)	These regulations contain the procedures for complying with Executive Order 11990 on wetlands protection. Appendix A state that no remedial alternative adversely affect a wetland if another practicable alternative is available. If no alternative is available, impact from implementing the chosen alternative must be mitigated.	Federal	If remedial action affects a wetland, these regulations would apply.
Executive Order on Floodplain Management	Exec. Order 11,988	Requires Federal agencies to evaluate the potential effects of actions they may take in a flood plain to avoid, to the maximum extent possible, the adverse impacts associate with direct and indirect development of a flood plain.	Federal	Applicable to remedial actions that affect or impinge on flood plains.

TABLE 65: ACTION-SPECIFIC ARARs				
Standard, Requirement, Criteria or Limitation	**Citation (certain provisions of)**	**Description**	**Federal or State ARAR**	**Comment**
Solid Waste Disposal Act	42 USC Sec. 6901-6987		Federal	
Identification and Listing of Hazardous Waste	40 CFR Part 261	Defines those solid wastes that are subject to regulation as hazardous wastes under 40 CFR Parts 262-265 and Parts 270, 271, 124	Federal	Determines potential waste classifications and applicability of land disposal restrictions under 40 CFR 268.
Standards Applicable to Generators of Hazardous Waste	40 CFR Part 262		Federal	
Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities	40 CFR Part 264	Establishes minimum national standards that define the acceptable management of hazardous waste fo rowners nad operations of facilities that treat, store or dispose of hazardous waste.	Federal	Onsite disposal of hazardous waste is not anticipated. Onsite treatment of characteristic waste in temporary units may be necessary.
Preparedness and Prevention	Subpart C	Specifies requirement for communications, alarm systems and coordination with local authorities	Federal	Onsite waste management of generated hazardous waste may be necessary based on hazardous waste determinations.
Contingency Plan and Emergency Procedures	Subpart D	Requires development of a contingency plan and designation of an emergency coordinator	Federal	Onsite waste management of generated hazardous waste may be necessary based on hazardous waste determinations.

TABLE 65: ACTION- SPECIFIC ARARs				
Standard, Requirement, Criteria or Limitation	**Citation (certain provisions of)**	**Description**	**Federal or State ARAR**	**Comment**
Manifest System, Record Keeping and Reporting	Subpart E	See 264.71 (Use of manifest system) and 264.73 (operating record)	Federal	Onsite waste management of generated hazardous waste may be necessary based on hazardous waste determinations.
Releases from Solid Waste Management Units Waste Piles	Subpart F		Federal	Requirements for detection of release from SWMUs are applicable for units treating generated hazardous waste.
Waste Piles	Subpart L	See 264.251 (Design and operating requirements), 264.254 (Monitoring and inspection), 264.258 (Closure and Post-closure care)	Federal	Onsite treatment of generated hazardous waste may be necessary based on hazardous waste determinations.
Corrective Action for Solid Waste Management Units	Subpart S - 264.553 (Temporary Units)	This part of the regulation includes the definition of a Temporary Unit (TU) to facilitate waste management treatment associated with cleanup activities. Hazardous waste treated within a TU is not subject to LDRs. However, the treated soil must meet LDRs prior to offsite disposal.	Federal	Onsite treatment of generated hazardous waste may be necessary based on hazardous waste determinations.

TABLE 65: ACTION- SPECIFIC ARARs				
Standard, Requirement, Criteria or Limitation	**Citation (certain *provisions of*)**	**Description**	**Federal or State ARAR**	**Comment**
Land Disposal Restrictions	40 CFR Part 268	Identifies hazardous waste that are restricted from land disposal	Federal	Based on hazardous waste determinations, compliance with LDRs may be needed.
Alternative Land Disposal Restriction Treatment Standards for Contaminated Soil	40 CFR Part 268.49	Achieve the greater of 90 percent reduction in total constituent concentrations or ten times the Universal Treatment Standards (UTS) for the constituent.	Federal	Based on hazardous waste determinations, compliance with LDRs may be needed.
Toxic Substance Control Act PCB Requirements	15 USC Sec. 2601-2629	Establishes storage and disposal requirements for PCBs (see 40 CFR Part 761, Subpart D).	Federal	PCBs are a site COC. Concentrations, however, may be below levels that require adherence to TSCA.
Florida Hazardous Waste Rules	Portions of FAC Chapter 62-730 comparable to the Federal ARARs identified in 40 CFR 261 through 268	Equivalent or more stringent than the Federal ARARs identified in 40 CFR 261 through 268.	State	If the State requirements are more stringent that the Federal requirements, then the State requirements will be followed.

TABLE 65: ACTION- SPECIFIC ARARs				
Standard, Requirement, Criteria or Limitation	**Citation (certain provisions of)**	**Description**	**Federal or State ARAR**	**Comment**
Florida Air Pollution Rules - October 1992	FAC Chapter 62-2	Establishes permitting requirements for owners and operators of any source that emits any air pollutant. The rule also establishes ambient air quality standards for sulfur dioxide, PM_{10}, ozone.	State	
Florida Regulation of Stormwater Discharge - May 1993	FAC Chapter 62-25	Requirements for discharges of untreated storm water to ensure protection of the surface water of the state	State	
Florida Ambient air Quality Standards - December 1994	FAC Chapter 62-272	Establishes ambient air quality standards necessary to protect human health and public welfare.	State	
Florida Water Well Permitting and Construction Requirements - March 1992	FAC Chapter 62-532	Establishes minimum standards for the location, construction, repair an abandonment of water well. Permitting requirements and procedures are established.	State	

TABLE 65: ACTION- SPECIFIC ARARs				
Standard, Requirement, Criteria or Limitation	**Citation (certain provisions of)**	**Description**	**Federal or State ARAR**	**Comment**
Florida Rules on Hazardous Waste Warning Signs - July 1991	FAC Chapter 62-736	Requires warning signs at NPL and FDEP identified hazardous waste sites to inform the public of the presence of potentially harmful conditions	State	

"To-Be-Considered" (TBC)[9]

The following is a listing of those TBCs utilized in the remedy:

- Standards found in 20 CFR 1910 from the Occupational, Health and Safety Administration (OSHA) are carried as to-be-considered values pursuant to 40 CFR 300.400(g)(3).

- The soil cleanup target levels (SCTLs) for residential and industrial scenarios found Chapter 62-777 are utilized as default values to satisfy the State chemical-specific ARAR relating to a carcinogenic risk of 1×10^{-6} and a hazard index of 1 for noncarcinogens.

- Chapter 62-780's 2 foot minimum for breaking exposure pathways between people and contaminated soil is utilized as a default thickness.

11.3 ARAR Waivers (NCP §300.430(f)(5)(ii)(C))

This Part of the ROD explains any federal or state laws that the remedy will not meet, the waiver invoked, and the justification for invoking the waiver.

No ARAR waivers are utilized in this ROD.

11.4 Cost Effectiveness (NCP §300.430(f)(5)(ii)(D))

This Part of the ROD explains how the Selected Remedy meets the statutory requirement that all Superfund remedies be cost-effective. A cost-effective remedy in the Superfund program is one whose "costs are proportional to its overall effectiveness". (NCP §300.430(f)(1)(ii)(D)). The "overall effectiveness" is determined by evaluating the following three of the five balancing criteria used in the detailed analysis of alternatives: (1) Long-term effectiveness and permanence; (2) Reduction in toxicity, mobility and volume (TMV) through treatment; and, (3) Short-term effectiveness. "Overall effectiveness is then compared to cost" to determine whether a remedy is cost-effective (NCP §300.430(f)(1)(ii)(D)).

For determination of cost effectiveness, a cost effectiveness matrix was utilized (see Table 66). In the matrix, the alternatives were listed in order of increasing costs. For each alternative, information was presented on long term effectiveness and permanence, reduction of toxicity, mobility and volume through treatment, and short term effectiveness. The information in those three categories was compared to the prior alternative listed and evaluated as to whether it was more effective (+), less effective (-) or of equal effectiveness (=).

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[9] By definition, ARARs are promulgated, or legally enforceable federal and state requirements. EPA has also developed another category known as "to be considered" (TBCs), that includes nonpromulgated criteria, advisories, guidance, and proposed standards issued by federal or state governments. TBCs are not potential ARARs because they are neither promulgated nor enforceable. It may be necessary to consult TBCs to interpret ARARs, or to determine preliminary remediation goals when ARARs do not exist for particular contaminants. Identification and compliance with TBCs is not mandatory in the same way that it is for ARARs.

TABLE 66: COST EFFECTIVENESS MATRIX

RELEVANT CONSIDERATIONS FOR COST EFFECTIVENESS DETERMINATION					
Alternative	**Cost Effective?**	**Present Worth Cost**	**Long Term Effectiveness and Permanence**	**Reduction of TMV[1] through Treatment**	**Short Term Effectiveness**
1) No Action	Not Applicable	$70,000 (F) $70,000 (C) $70,000 (L)	No Reduction in Long Term Risk	No reduction of TMV	Continued Risk to Community and Environment
2) Soil Cover with Excavation and Offsite Disposal	Yes	$13,200,000 (F) $21,400,000 (C) $9,100,000 (L)	+ Minimal Reduction in Long Term Risk	+ Reduction of TMV (via some soil treatment for offsite disposal)	+ Controllable risk to community and workers
3) Shallow Excavation, Offsite Disposal and Soil Cover	Yes	$22,500,000 (F) $29,500,000 (C) $22,800,000 (L3a) $54,500,000 (L3b)	+ Reduces Risks to Acceptable Levels	+ Reduction of TMV (via more soil treatment for offsite disposal)	= Controllable risk to community and workers
4) Deep Excavation and Offsite Disposal	No	$24,200,000 (F) $29,700,000 (C) $112,200,000 (L)	= Reduces Risks to Acceptable Levels	+ Reduction of TMV (via more soil treatment for offsite disposal)	- Controllable risk with great effort and disruption to community. Controllable risk to workers

Notes:

1. TMV = Toxicity, Mobility and Volume

Key: + More effective than previous alternative
- Less effective than previous alternative
= No change in effectiveness over previous alternative

The selected remedy is considered cost effective because it is a permanent solution that reduces human health and ecological risks to acceptable levels at less expense than some of the other permanent, risk reducing alternatives evaluated.

11.5 Utilization of Permanent Solutions and Alternative Treatment (or Resource Recovery) Technologies to the Maximum Extent Practicable (MEP) (NCP §300.430(f)(5)(ii)(E))

The selected remedy for soil, provides for reduction of toxicity, mobility and volume, but not through treatment. A large volume of contaminated soil will be transported off-site, resulting in a permanent solution. The selected remedy provides for treatment of contaminated soil only as needed to satisfy RCRA Land Ban Disposal requirements.

11.6 Preference for Treatment as a Principal Element (NCP §300.430(f)(5)(ii)(F))

The selected remedy considers that a small percentage of the excavated soil will be in need of treatment. For example, it is believed that some of the soil contains hazardous characteristics requiring it to be considered a RCRA hazardous waste and in need of treatment pursuant to RCRA treatment standard requirements at 40 CFR §268. .

11.7 Indication of the Remediation Goals (NCP §300.430(f)(5)(iii)(A))

Tables 51, 52, 53 and 54 list the RGs to be met by the remedy. Confirmatory sampling or similar means will be used to determine satisfaction of the RGs and disposal requirements.

11.8 Documentation of Significant Changes from Preferred Alternative of Proposed Plan (NCP §300.430(f)(5)(iii)(B))

The Proposed Plan for the Jacksonville Ash Site was released for public comment in July 2005. The public comment period was from July 28, 2005, to September 12, 2005. The Proposed Plan identified Alternative 3 (Alternative 3a for Lonnie C. Miller Park) as the remedy. Written comments were received by EPA during the public comment period. EPA reviewed the verbal comments submitted during the public meeting, which was transcribed by a court reporter. See Part 13 of this ROD for a response to the comments received.

Based on concerns expressed by the Florida Department of Environmental Protection and community members, the preferred remedy was changed to include groundwater monitoring to verify the "No Action" decision on the groundwater and geotextile mat (or other appropriate membrane) topped with gravel will be placed under houses with open crawlspaces (that are accessible by children) with soil containing COCs above RGs. The geotextile and gravel will remove the possibility of exposure to soils under houses with open crawlspaces.

References to the voluntary removal of ash > 25% that were made in the Proposed Plan have been removed from the final remedy in the ROD. This is a remedy implementation issue that can be considered during Remedial Design and not a remedial goal.

11.9 Five-Year Requirements (NCP §300.430(f)(5)(iii)(C))

Because this remedy will result in hazardous substances, pollutants, or contaminants remaining on-site above levels that do not allow for unlimited use and unrestricted exposure, a statutory 5 year review will be conducted within five years of construction completion for the site to ensure that the remedy is, or will be, protective of human health and the environment.

PART 12: COMMUNITY OUTREACH LEADING UP TO PROPOSED PLAN

12.1 Community Outreach

The first EPA Fact Sheets discussing the Jacksonville Ash Site was distributed in September 1999 and February 2000. Community interviews were conducted in December 1999 and a Community Relations Plan was prepared in March 2000. A RI/FS Kickoff public meeting was held on May 1, 2000, with a Fact Sheet prepared to inform the public about the start of the RI/FS.

In January 2000, the North Riverside Community Association was chosen as the Technical Assistance Plan (TAP) community group to hire a technical advisor to review and comment on the technical aspects of the RI/FS and to communicate information to the affected community. The technical advisors have been sent all major technical documents for review and comment during the RI/FS.

In order to increase participation in the RI sampling of residential yards, an EPA Fact Sheet requesting access for sampling was issued in December 2001. In January 2002, the EPA and the City walked through the neighborhood making contact with people who had not returned previous requests for access. During the walk through the community, questions on the access agreements and the importance of the additional sampling were answered.

In March 2002, U.S. Representative Corrine Brown sent a letter to individuals who had not signed the access agreements. Representative Brown's letter encouraged people to sign the access agreement so sampling could take place to determine if incinerator ash and contaminated soil are present.

Another EPA Fact Sheet was distributed to the community in May, 2002 providing the status of the investigation and again asking for cooperation with any future access requests for sampling. In January 2003 and August 2005, EPA Fact Sheets were distributed to the community providing the status of the investigation.

The EPA Fact Sheet presenting the proposed remedy for the Site was issued in July 2005.

Several public meetings were held throughout the RI/FS to keep the community informed of the status of the sites and to allow the public to ask questions. The dates of some of these public meetings are November 13, 1999, September 11, 2000, February 19, 2000, March 28, 2001 and June 7, 2002. A public availability session was held on September 8, 2005 during the public comment period for the Proposed Plan.

PART 13: PUBLIC PARTICIPATION IN REMEDY SELECTION (NCP §300.430(f)(3))

13.1 Public Notice (NCP §300.430(f)(3)(i)(A)), Public Comment (NCP §300.430(f)(3)(i)(B) and (C)), Public Meeting (NCP §300.435(f)(3)(i)(D) and (E))

Mailing of the Proposed Plan Fact Sheet to the community began on July 28, 2005. The Administrative Record file was made available to the public on August 1, 2005. The Administrative Record was also placed in the information repositories maintained at the EPA Region 4 Superfund Record Center and at the Emmett Reed Community Center, Jacksonville Urban League Office and Bradham Brooks Public Library. The notice of the availability of the Administrative Record and an announcement of the Proposed Plan public meeting was published in the Jacksonville Times Union on August 2, 2005. A public comment period was held from July 28, 2005, to September 28, 2005. The public comment period was expanded until September 12, 2005. The Proposed Plan was presented to the community in a public meeting on August 10, 2005, at the Emmett Reed Community Center. At this meeting, representatives from EPA answered questions about the Site and the proposed remedy and accepted public comments.

13.2 Significant Changes from Preferred Alternative of Proposed Plan

Based on concerns expressed by the Florida Department of Environmental Protection and community members, the preferred remedy was changed to include groundwater monitoring to verify the "No Action" decision on the groundwater and geotextile mat (or other appropriate membrane) topped with gravel will be placed under houses with open crawlspaces (that are accessible by children) with soil containing COCs above RGs. The geotextile and gravel will remove the possibility of exposure to soils under houses with open crawlspaces.

References to the voluntary removal of ash > 25% that were made in the Proposed Plan have been removed from the final remedy in the ROD. This is a remedy implementation issue that can be considered during Remedial Design and not a remedial goal.

13.3 Responsiveness Summary ((NCP §300.430(f)(3)(i)(F))

Written and verbal comments were received during the public comment period. A copy of the written comments and a copy of the public meeting transcript is in the Administrative Record. A brief summary of the major comments is contained in the following paragraphs:

Comments from the Community

Verbal and written comments were received during the public comment period. Many questions were asked and answered at the public meeting. A copy of the written comments and a copy of the public meeting transcript (including EPA responses at the meeting) are in the Administrative Record. When viewed as a whole, there were several themes found in the written and verbal comments received. A brief summary of the major themes/comments is contained in the following paragraphs followed by EPA's response.

Summary of Verbal Comments from Public Meeting: Some community members expressed concern with contamination remaining at depths below 2 feet, below trees, houses, and roads after installation of the soil cover and associated soil excavation is complete.

Response: *The prevention of human exposure to surface soil is provided by 2 feet of uncontaminated soil, and along with the Institutional Controls constitute a protective remedy by eliminating and/or managing future human contact with subsurface or sub-structure contaminated soil. Use of a thickness of 2 feet of clean soil to break the exposure pathway is actually very protective; in fact, more protective than what is being done at many other lead sites across the country. For example, on page 37 of the Superfund Lead-Contaminated Residential Sites Handbook (i.e., Lead Handbook; OSWER 9285.7-50, June 2003), it is stated that "...the top 12 inches in a residential yard can be considered to be available for direct human contact. With the exception of gardening, the typical activities of children and adults in residential properties do not extend below a 12-inch depth. Thus, placement of a barrier of at least 12 inches of clean soil will generally prevent direct human contact and exposure to contaminated soil left at depth...Twenty-four (24) inches of clean soil cover is generally considered to be adequate for gardening areas...24-inch barrier normally is necessary to prevent contact of contaminated soil at depth with plant roots, root vegetables, and clean soil that is mixed via rototilling. "*

On page 44 of the Superfund Lead Handbook (EPA 2003f), the following point is made regarding placement of a marker, which will be placed in all areas at the Jacksonville Ash Site where contamination above the RGs remain at depth, "[i]f contamination is not removed to the full depth of contamination on a property, a permanent barrier/marker that is permeable, easily visible and not prone to frost heave, should be placed to separate the clean fill from the contamination...Examples of suitable barriers/markers include snow fencing (usually orange), a clean, crushed limestone layer, and geofabric."

Implementation of the remedy at the Jacksonville Ash Site will result in some areas with soil contamination remaining at depth (i.e., under the 2 foot thick soil cover, under houses, roads, etc.). To address those areas with contamination remaining above RGs, the remedy relies on Institutional Controls to eliminate or manage exposure to soil contamination remaining at the Site. Institutional Controls are non-engineered instruments, such as administrative and/or legal controls, that help to minimize and/or manage the potential for human exposure to contamination and/or protect the integrity of a remedy.

Summary of Verbal and Written Comments from Public Meeting: Some community members expressed a desire to be relocated.

Response: *EPA's preference is to address the risks and choose methods of cleanup which allow people to remain safely in their homes and businesses. However, the National Contingency Plan (NCP- 40 CFR part 300, App. D(g)) does state that, "[t]emporary or permanent relocation of residents, businesses, and community facilities may be provided where it is determined necessary to protect human health and the environment." Temporary relocation for eligible residents upon their request is specifically provided for in the ROD. Regarding application of permanent relocation, two possible EPA triggers for using permanent relocation were identified during stakeholder forums hosted by EPA and held between May 1996 and October 1997 on the Interim*

Policy on the Use of Permanent Relocations as Part of Superfund Remedial Actions. Specifically, EPA stated that its primary reasons for conducting a permanent relocation would be to address an immediate risk to human health (where an engineering solution is not readily available) or where the structures (e.g., homes or businesses) are an impediment to implementing a protective cleanup.

In the July 8, 1999, EPA Federal Register public noticing the Interim Policy on the Use of Permanent Relocations as Part of Superfund Remedial Actions the following was stated: "[t]o date, the overwhelming majority of Superfund sites located in residential areas are being cleaned up without the need to permanently relocate residents and businesses. For example, at the Glen Ridge, Montclair/West Orange Radium Sites in New Jersey, and the Bunker Hill Mining Site in Idaho, EPA has successfully excavated contaminated soils from approximately 5,000 residential properties down to levels of contamination that no longer pose unacceptable risks. By addressing the risks at these three Sites through cleanups, people were able to remain in their homes and entire communities were kept intact." In summary, EPA Region 4 believes that the removal of two feet of soil where contamination exists in residential areas, followed by institutional controls, around existing homes/buildings is technically feasible, reasonable, cost effective and protective of human health and the environment at the Jacksonville Ash Site.

Summary of Verbal Comments from Public Meeting: Some community members expressed concern that their minority community is being treated differently with regard to the proposed cleanup approach.

Response: *The U.S. EPA is committed to the fair treatment of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear disproportionately high and adverse human health or environmental effects resulting from Federal agency programs, policies, and activities. The remedy selection process has been undertaken with this definition of fair treatment.*

Summary of Verbal and Written Comments from Public Meeting: Some community members asked if the Forest Park Head Start School was safe for their children to attend.

Response: *The contaminated soil around the school (i.e., the playground, parking lot and public parks) has been covered with clean soil to prevent exposure to ash contamination. The Duval County Department of Health annually tests the blood lead levels of children attending the school and has found blood lead level to be below the criteria of 10 micrograms/deciliter and below the average child blood lead level for the county. All available data indicates that the children at the Head Start School are not exposed to ash contamination and are safe.*

Summary of Written Comments from Public Meeting: Some community members expressed the desire for more time for public comment and an additional public information meeting.

Response: *The 30-day public comment period required by the NCP was originally planned to end on August 28, 2005. Based on public requests and a desire by EPA to allow the community*

to communicate their concerns, the public comment period was extended until September 12, 2005. In addition to the August 10, 2005 Proposed Plan public meeting, a public information meeting was held on September 8, 2005 to allow the community to ask questions and to offer more comments. EPA believes the additional steps to involve the public has been successful in obtaining meaningful input from the community.

Summary of Written Comments from Public Meeting: Some community members expressed the desire to have soil removed from under the buildings with open crawl space.

Response: *Risk associated with elevated soil lead levels is directly proportional to the duration and frequency of exposure. Although it is EPA's technical judgement that the levels under crawl spaces are not frequented nor is the duration such that unacceptable risks occur, in an attempt to eliminate any possible direct exposure to soil in available open crawl space accessible to children, the remedy has been modified to include placement of a geotextile mat (or other membrane) topped with a layer of gravel.*

Summary of Written Comments from Public Meeting: Some community members expressed the desire to have the Brooklyn area tested for contamination.

Response: *Parts of Brooklyn have already been sampled with additional sampling planned in Operable Unit 2. Operable Unit 2 will be sampled once the remedy for Operable Unit 1 is underway. There is a possibility of ash contamination existing in other parts of the city. These areas cannot be brought into the Jacksonville Ash Site as they are not contiguous but will have to handled as different sites. The Florida Department of Environmental Protection or EPA will evaluate any suspected area of ash contamination and determine if it should be handled as a Superfund site or through another State environmental program.*

Summary of Written Comments from Public Meeting: A community member asked what effect will testing have on property values.

Response: *Testing of properties allows EPA to determine whether there is contamination present that warrants remediation. With knowledge of the presence or absence of contamination on a property, that lot can be determined to be safe or included in the cleanup by the City of Jacksonville. The remedy, which includes excavation of contamination to 2 feet in residential areas, will remove the majority of ash contamination on most lots. Having the contamination removed from a property should help maintain properties values better than leaving the contamination on the lot. The remedy should aid the real estate values by removing uncertainty which exists due to the existing contamination. EPA believes that the cleanup approach does not preclude and may even lead to redevelopment in the area.*

Summary of Written Comments from Public Meeting: A community member asked who decides what option will be used for clean up.

Response: *EPA's remediation decision is based on site facts as applied to established Agency regulations, policies and guidance. EPA, with input from the EPA National Remedy Review Board and the Florida Department of Environmental Protection, makes the final cleanup*

decision after considering a variety of alternatives using the nine remedy evaluation criteria stated in Part 8.1 of the ROD. One of the modifying criteria for selecting the final remedy is community acceptance of the remedy based on comments received during the Proposed Plan public comment period and public meetings.

Summary of Written Comments from Public Meeting: A community member asked if there was monetary assistance available for citizens to clean up a property so they can buy it.

Response: *EPA is not aware of monetary assistance for citizen initiated cleanups. It is anticipated that the Responsible Party (the City of Jacksonville) will fund and perform the cleanups.*

Comments from the TAP Community Group

Verbatim Written Comment Received on September 21, 2005:
Comments on the selected remedy for the Jacksonville Ash Sites, August 22, 2005
Submitted to the North Riverside Community Association under the TAP grant.
Dr. R. Kevin Pegg, Technical Advisor to the North Riverside Community Association

Overview of materials for evaluating the remedy
We recently received for review and comment several documents from the Environmental Protection Agency related to cleanup of the contaminated ash sites in Jacksonville, Florida. The Remedial Investigation report dated December 2004 provides the most recent data on testing in the contaminated neighborhoods surrounding former incinerators and Lonnie C. Miller Sr. Park. The Feasibility Study report dated May 2005 discusses several scenarios for cleaning up the sites and gives supporting documentation. The Removal Action Work Plan for the 5th and Cleveland Incinerator site dated July 2005 gives specific information on one area requiring cleanup. The Superfund Fact Sheet Proposed Plan Jacksonville Ash Superfund Site Dated July 2005 provides a broad overview of the three sites and discusses EPA's rationale for choosing a remedial plan based on partial removal and covering. In addition to the Remedial Investigation and Feasibility Study, we also used information from the Human Health Baseline Risk Assessment in evaluating the remedies selected by EPA and the City of Jacksonville. Finally, we received a copy of the EPA presentation from the public meeting on August 10, 2005, with a cover letter discussing the meeting. Our understanding of the plan is inclusive of the verbal commentary at the meeting and the slides presented to the public.

Issue 1: Differences between the Feasibility Study and the plan proposed at the public meeting.

Based on a critical reading of the Feasibility Study Alternative 3 states that 2 feet of clean fill covering areas of ash is the remedy, and excavation occurs only when the additional 2 feet height would result in drainage problems. When drainage problems from the additional surface elevation occur then excavation would be used, however only to the extent that allows a cover fill. The EPA's Fact Sheet handed out in advance of the public meeting is less clear than the Feasibility Study regarding the amount of excavation. It is our understanding from the public meeting slide presentation, and the verbal description of the remedy by Mr. Joseph Alfano, that the remedy would include excavation of all ash above 25% and contaminants on the private

residential lands of the neighborhoods and backfilling to grade. The Record of Decision and any Statement or Scope of Work should spell out in detail site residential cleanup methodology.

Issue 2: Clarification of private residential properties versus public properties

The Feasibility Study does not differentiate between public and private lands, or between current residential properties and future public areas. People in this area are more likely to be exposed at home or from a neighboring home site than from exposure in city facilities or from occasional use of a city park.

Alternative 3 chosen by the EPA for cleaning up the sites is reasonable and appropriate only for remediating public lands. Only alternative 4, removal of all ash and contaminates, is appropriate for private residential properties. Alternative 4 will better meet both the protective of human health and long-term effectiveness requirements under Superfund law for private residential property.

In the copy of the Public Meeting slides provided by EPA "Proposed Remedy (continued)" slides do differentiate between cleanups on private and public lands (the slides were not numbered, in our file these are slides 54 and 55). Removal of contamination in the upper two feet of soil is discussed in the slides for residential property. In the slides a nonresidential property has a cleanup consisting of a two-foot deep cover of clean compacted soil. These are significantly different cleanups. Essentially the EPA public meeting slides describe a different cleanup than that described in the FS.

The ROD and SOW should clearly describe the types of cleanups that occur on residential private property and the types of cleanups that occur on commercial or public properties. Each has a significant different risk associated with it, and compositing risk for this neighborhood is inappropriate.

Response to Issues 1 and 2: The Feasibility Study does use language that is not clear as to the extent to which contaminated soil will be excavated or covered. EPA clarified its position in the July 2005 Proposed Plan by specifying the type of remediation that is required for different land uses. Remediation for residential property is stated as removal of contaminated soils above remedial goals of up to two feet before placement of a soil cover. Removal of less than two feet is acceptable when there is less than two feet of contaminated soil above remedial goals, around building foundations and other structures and around the base of trees if they are left in place. Excavation of contaminated soil greater than two feet is allowed, but not required, to remove all contaminated soils and lessen the need for institutional controls. On industrial properties and non-residential properties such as the city-owned parks the remedy is excavation of contaminated soils as needed to allow installation of a two foot soil cover. EPA's position that residential properties will have up to two feet of contaminated soil above remedial goals removed before placement of a soil cover will be clearly stated in the Record of Decision.

As to the choice of Alternative 3 over Alternative 4, EPA believes that prevention of human exposure to surface soil is provided by 2 feet of uncontaminated soil, and along with the Institutional Controls constitute a protective remedy by eliminating and/or managing future human contact with subsurface or sub-structure contaminated soil. Use of a thickness of 2 feet

of clean soil to break the exposure pathway is more protective than what is being done at many other lead sites across the country. For example, on page 37 of the EPA's Lead Handbook, it is stated that "...the top 12 inches in a residential yard can be considered to be available for direct human contact. With the exception of gardening, the typical activities of children and adults in residential properties do not extend below a 12-inch depth. Thus, placement of a barrier of at least 12 inches of clean soil will generally prevent direct human contact and exposure to contaminated soil left at depth...Twenty-four (24) inches of clean soil cover is generally considered to be adequate for gardening areas...24-inch barrier normally is necessary to prevent contact of contaminated soil at depth with plant roots, root vegetables, and clean soil that is mixed via rototilling. "

To address those areas with contamination remaining above RGs, the remedy relies on Institutional Controls to eliminate or manage exposure to soil contamination remaining at the Site. Institutional Controls are non-engineered instruments, such as administrative and/or legal controls, that help to minimize and/or manage the potential for human exposure to contamination and/or protect the integrity of a remedy.

Issue 3: Cleanup lacks completeness

The cleanup plan presented by the EPA includes buffer zones where no cleanup occurs near homes and some trees. While cleanup under pad foundations is not a necessity for this type of waste many of the homes in the area, especially the older homes, have pier foundations with crawl spaces. The technology to remove ash safely and efficiently certainly exists and should be utilized. Many of the trees where ash occurs only have surface contamination and can be effectively and safely remediated. The language in the FS is "corner cutting" to reduce the cleanup volumes in violation of the intent of Superfund criteria for reductions in toxicity and effectiveness.

EPA should provide a parcel-by-parcel decision of actual cleanup technologies for each private lot.

Response to Issue 3: Risk associated with elevated soil lead levels is directly proportional to the duration and frequency of exposure. Although it is EPA's technical judgement that the levels under crawl spaces are not frequented nor is the duration such that unacceptable risks occur, in an attempt to eliminate any possible direct exposure to available and utilized crawl space, the remedy has been modified to include placement of a geotextile mat topped with a layer of gravel

If property owners do not wish vegetation to be removed (e.g., trees), then hand digging around such vegetation will occur. However, the target depth of two feet might not be reached (i.e., soil removal will have to be to a practicable extent). It is EPA's technical judgement that the risk associated with contaminated soil remaining above RGs under bushes, trees, etc. is minor. Risk in a residential setting is apportioned across the entire property. In other words, the exposure area is the specific parcel under review. EPA believes that spatially averaged (i.e., mean, composite) concentrations best represents exposure to site contaminants over the long term. For risk assessment purposes, any individual is assumed to move randomly across the exposure area over time. It is not believed that the small pockets of remaining contamination associated with trees, bushes, etc. will pose an unacceptable risk. Alternatively, trees and other vegetation could

be removed if the home owner wishes to have it removed. If removed, they will be replaced with a less mature tree which, with time, will grow leading to the replacement of the tree canopy.

Parcel-by parcel remedial decisions are not made in the Record of Decision. Parcel-by-parcel remedial decisions will be made during the remedial design of the selected remedy.

Issue 4: Confusing language regarding eminent domain

The language on properties included under eminent domain removal actions in the Feasibility Study is far too vague and should be clarified. EPA's presentation did not discuss eminent domain at all. How is ED to be applied? If a private residential lot cleanup cost exceeds some arbitrary value set by the City will the responsible party utilize ED to convert to public property and reduce its costs? There should be a public benefit, not just a cost saving to the city, when ED is utilized.

Response to Issue 4: The City of Jacksonville has the power of eminent domain and will be responsible for decisions concerning changes in land use. EPA is committed to preserving the communities proposed for remediation and will use its authority to the extent possible to prevent shortcuts designed to cut costs at the expense of the communities. The specifics of the remediation will be decided during the remedial design phase with input from the City, EPA, the Florida Department of Environmental Protection and the Remedial Design/Remedial Action community group.

Issue 5: Clarification of standards and when they apply

Language regarding the applicability of state standards for heavy metals and organic toxins should be strengthened, especially regarding how the state standards should be met. State of Florida cleanup standards should always be met by direct testing using EPA methods, not by interpolations of TCLP methods.

The language of slide 42 ("Feasibility study, continued") regarding additional testing to comply with new state standards should be clarified. According to the slide additional sampling is done concurrent with remedial design activities; however, the full extent of contamination for Operable Unit 1 cannot be known until sampling is complete, therefore a Remedial Design could not be finalized. Perhaps there are RD stages I, II, III, etc., but this is not clear at this point.

Response: *The Agency has recognized the carcinogenic risk level of 10^{-6} and the noncarcinogenic hazard index of 1 as applicable or relevant and appropriate requirements (ARARs) that by law must be met or waived. As such, the RGs in the ROD were selected to meet these risk levels. Direct testing using EPA methods are used to make remedial decisions. TCLP is used to determine if a material is a hazardous waste subject to RCRA Subtitle C requirements.*

Results of the proposed additional sampling will be incorporated into the remedial design as the information becomes available. The complexity of the remediation and the time period expected to implement the remedy will allow for the continued evaluation of areas requiring remediation. If all the sampling data is not available when the first remedial design document is completed there will be additional phases of remedial design. It should also be noted that EPA does not

expect the additional sampling to add significantly to the parcels to be remediated. The large majority of Operable Unit 1 properties should be included in the first remedial design document.

Issue 6: Stabilization of the banks of Ribault River, Hogan's Creek, and McCoys Creek.

The discussion in the Feasibility Study and in the EPA Fact Sheet and in the presentation regarding this issue is totally inadequate. There are no bona fide volumes estimates, no discussion of remediation targets, no detailed maps showing areas to be remediated versus not remediated, no cost estimates. What are the "acceptable side slopes?" Are these side slope degrees based on State or Federal standards? What are the engineering estimates for long-term stability? If information was provided on this important aspect of the cleanup, it was not indexed so that it could be examined critically. A separate remedial design plan is probably needed for understanding this part of the cleanup plan.

Response to Issue 6: The details of the stabilization of the stream banks will be determined in the remedial design. Acceptable side slopes and other design elements for the bank stabilization will be determined by professional engineers trained in slope stability and bank stabilization design. The design will be reviewed by EPA using a professional engineer, possibly the Army Corps of Engineers. Although there are no specific costs associated with stream bank stabilization in the Feasibility Study, it is not expected to significantly alter the overall estimated cost of the remedy at $74,800,000. Part of the City's annual operations and maintenance activities will require inspecting the stabilized slopes and repairing any damage to ensure the protectiveness and longevity of the remedy.

Issue 7: Cost breakdowns unclear or missing.

As noted above, there are seems to be no estimate for the waterways. Further, the cost breakdown provided is incomplete since the costs of only remediating private residential lots are not included. As provided the costs are biased due to the higher volumes of waste (thicker and deeper layers) occurring on public sector property.

EPA should provide a parcel-by-parcel breakdown of actual cleanup costs for each lot, so that the public can see how cleanup funds are truly allocated in this cleanup. We believe this may show that most of the funds are spent to clean lands with the least potential for causing harm to neighborhood residents. Essentially, it appears the City of Jacksonville may have chosen to spend tax dollars primarily to remediate City of Jacksonville lands under this proposed cleanup. The cleanup volume estimates provided in the RI/FS indicate that complete remediation of residential property is reasonable and can be accomplished without significantly impacting the total cleanup costs for this site.

Response to Issue 7: The selected remedy for both residential and non-residential properties is to remove direct contact with the first two feet of contaminated soil above remedial goals by either removal of the first two feet followed by backfilling with clean soil or covering with 2 feet of uncontaminated soil. The specific remedy in residential areas is removal of contaminated soil above remedial goals with disposal of contaminated soil followed by backfilling. This is inherently more costly than the covering of contamination that may occur on non-residential public lands. Remediation on residential properties will be relatively more expensive than on

non-residential public lands.

Furthermore, the cost estimates in Appendies F, G and H in the Feasibility Study does break down estimated costs for remediating residential versus non-residential properties. Two out of three of the sites have estimated residential remedial costs significantly higher than non-residential public lands. Only the Forest Street site has higher estimated non-residential remedial costs versus residential remedial costs, this reflects the greater proportion of non-residential properties to residential properties present at the Forest Street site.

Finally, we respectfully request our issues be made part of the permanent administrative record (AR) for this site. Also, we would prefer a point-by-point response to each of the seven issues, not a composite or "blanket" response as is sometimes given. The breakdown in communication between EPA and the community at the public meeting made asking our questions in the open forum impossible. It would be especially helpful if we could comment on drafts of the Record of Decision for the Jacksonville Ash sites.

Response: Your issues have been included in the Responsiveness Summary to the Record of Decision along with EPA's response, and as such will be included in the Administrative Record. EPA has incorporated your concerns as much as possible in the shaping of the final Record of Decision.

Comments by Florida Department of Environmental Protection (FDEP)

FDEP provided EPA with comments on the Proposed Plan in a letter dated September 12, 2005. The FDEP letter's content is reproduced below, and changes to the ROD, where possible, have been incorporated into the ROD.

Verbatim Written Comment Received on September 12, 2005:
The Florida Department of Environmental Protection (FDEP) is committed to working with the U.S. Environmental Protection Agency (EPA) and the City of Jacksonville to develop a plan that will best remediate Brown's Dump and the Jacksonville Ash Sites. We appreciate your dedication and focus in developing a plan to clean up these sites. Through our collective efforts and expertise, we will be able to develop a comprehensive plan best suited for these neighborhoods. Below, we have offered a few comments regarding the above referenced sites:

Upon completion of the delineation of ash disposal areas, DEP has no objection to leaving contamination on-site if appropriate engineering and institutional controls are put in place to reduce or eliminate exposure to contaminants. The proposal to remove the upper two feet of ash and ash-impacted soils would meet a portion of DEP's requirements. At the same time, the overall remedial approach must include institutional controls equivalent to those described in DEP's Institutional Controls Procedures Guidance (November 2004) cited in the Referenced Guidelines section in Florida Administrative Code Chapter 62-780, Contaminated Site Cleanup Criteria. While existing building pads and paved areas may serve initially as an engineering control, without the corresponding properly recorded institutional control (i.e., restrictive covenants), assurance cannot be given that the engineering controls will remain in place, particularly upon property transfer.

The proposed remedial approach does not address accessing properties with uncooperative property owners. Due to the large number of properties that have not been sampled because the property owners have not yet granted site access, the approach needs to be improved to address this aspect of remediation. The City of Jacksonville needs to have a plan in place to eliminate or minimize exposure to contaminants through sampling of all properties. A complete sampling plan will reduce exposure risks. This should also include sampling at the limits of the defined ash sites needed to clearly demonstrate that all areas of ash have been found. That sampling should also include nonresidential and city owned properties, such as Brooklyn Park. Also, we understand that EPA does not intend to compel the responsible party (City of Jacksonville) to remediate properties with uncooperative owners. DEP is concerned that this approach may leave areas of contamination unaddressed.

The engineering control of leaving waste in place under existing buildings, in conjunction with a corresponding institutional control ensuring the buildings will remain in place appears adequate in these projects except for buildings that are above grade. We would appreciate information on the following questions:

" What data exists to characterize the levels of contamination under these buildings?

" What engineering controls are proposed to prevent animals and small children from exposure by crawling under these structures?

" Is EPA proposing to leave paving, such as driveways or parking lots, in place as the engineering control for the material beneath the paving?

" How will the proposal to leave trees, shrubs and vegetation with underlying ash and ash-impacted soils, be evaluated in the exposure risks on the individual lots?

DEP's rules require that a Professional Engineer certify that this engineering control is consistent with commonly accepted engineering practices and is appropriately designed and constructed for its intended purpose. A corresponding institutional control will be necessary to ensure that driveways or parking lots are properly maintained and not removed.

As previously commented on April 26, 2005, DEP requests that the remedial goals for Copper and Barium in soils be set at 150 and 120 mg/kg, respectively, to comply with State cleanup target levels. The potential for surface water impacts from the concentrations of iron in groundwater should also be addressed.

Response: *Although many of the comments are remedy implementation issues, and not directly related to the remedy selection process of the ROD, the following paragraphs contain EPA's response, observation or technical opinion to each statement made by FDEP in its comment letter.*

EPA believes that Institutional Control mechanisms identified in this ROD, namely governmental controls and voluntary proprietary controls (deed restrictions), along with EPA monitoring of the institutional control will be equally successful to forced restrictive covenants in addressing the State's concern that engineering controls remain in place (and effective). It is not EPA policy to force deed restrictions onto private property owners. EPA does not view a specific

Institutional Control mechanism in isolation. The selected remedy's approach is to identify several specific types of Institutional Controls for use in meeting the objective of preventing and/or managing potential human exposure to subsurface soil contamination remaining above RGs while the responsibility for monitoring the implementation and effectiveness of the control will be with EPA. During the Remedial Design, EPA will explore several forms of Institutional Controls with the City of Jacksonville including annual notification letters and the possible use of Florida's real estate statutes.

EPA believes the homeowners should be able to make an informed decision about allowing their property to be remediated. EPA will insure that the City of Jacksonville provides information about the Site contaminants and their potential risks. However, EPA believes that private homeowners have the right to refuse cleanup. It is not EPA's policy to force remediation on land owners who refuse it. Furthermore, it is not EPA policy to force access for sampling, although EPA did allow tenants of rental properties to sign access during RI sampling if the property owner did not sign the access. Once again EPA thinks it is the right of the property owner or tenant to decide if the property will be sampled. It will be up to the City of Jacksonville to decide whether to force access and by what means. EPA will look at expanding the model Consent Decree language which typically states that the PRP will use all available means to gain access to properties. EPA will work with the City to gain access for sampling all identified parcels in need of sampling. EPA will require the City of Jacksonville to mail annual letters notifying residents of the presence of contamination and offering to sample and remediate the contamination.

Risk associated with elevated soil lead levels is directly proportional to the duration and frequency of exposure. Although EPA believes that the soil under crawl spaces are not frequented nor is the duration such that unacceptable risks occur, in an attempt to eliminate any possible direct exposure to soil in open crawl space that are accessible by children, the remedy has been modified to include placement of a geotextile mat topped with a layer of gravel.

If property owners do not wish vegetation to be removed (e.g., trees), then hand digging around such vegetation will occur. However, the target depth of two feet might not be reached (i.e., soil removal will have to be to a practicable extent). It is EPA's technical judgement that the risk associated with contaminated soil remaining above RGs under bushes, trees, etc. is minor. Risk in a residential setting is apportioned across the entire property. EPA believes that spatially averaged (i.e., mean, composite) concentrations best represents exposure to site contaminants over the long term because it is assumed that any individual moves randomly across the exposure area over time. It is not believed that the small pockets of remaining contamination associated with trees, bushes, etc. will pose an unacceptable risk, although EPA will seek to use the City of Jacksonville's tree cutting ordinance as a method to have City oversight of tree removal that might result in soil exposures.

During implementation of the remedy, the status of constructed driveways will be determined. Such structures will have to be adequate to serve as barriers to contaminated soil.

EPA has calculated chronic exposure levels for these constituents in its Human Health Baseline Risk Assessments (HHBRA) that correspond to a carcinogenic risk of 10^{-6} and non-cancer risk of

HI = 1. EPA's Technical Service Section has written a Technical Memo dated October 25, 2005 stating EPA's disagreement with the methodology used to calculate these acute values. As EPA's Superfund risk assessment policy and guidance has not adopted this acute based methodology, EPA will use the chronic exposure levels calculated for these constituents in its HHBRA which EPA consider protective of human health. EPA believes that remediation of soil with exceedences of the main drivers for the remediation (lead, arsenic) will also remediate these constituents.

According to Eco Risk Assessments, Manganese is not a COC in surface water. Iron is a COC at Lonnie Miller and 5th & Cleveland. Surface water background concentrations are above Florida's surface water criteria (0.3 mg/L for iron and 0.1 mg/L for Manganese for shellfish consumption but otherwise there is not one due to the low toxicity of manganese). Manganese surface water background is 0.224 mg/L in McCoy's Creek (Forest Street) and 0.16 mg/L in Ribault River (Lonnie Miller). Iron surface water background is 1.56 mg/L in McCoy's Creek (Forest Street) and 2.33 mg/L in Ribault River (Lonnie Miller). EPA does not clean up below background levels. The groundwater in wells adjacent to the surface water bodies are below level of iron and manganese (except one well) in the surface water. The benthic life is actually subjected to lower concentrations of iron and manganese from the discharging groundwater than the existing surface water. Groundwater controls at this Site would have no environmental benefit for the surface water, however EPA will institute groundwater monitoring to determine the effects of the soil remediation on the groundwater discharge to the surface water.

Department of Health

Verbatim Written Comment Received on September 12, 2005:
Our mission is to continually improve the health and environment of our community. We would like to thank you for the opportunity to provide comments related to the Jacksonville Ash sites and the Brown's Dump feasibility study. First, I would like to express our appreciation for your excellent efforts and strong support while we worked together as a team to successfully address the many challenges and opportunities that the Jacksonville Ash sites and Brown's Dump brought to our city.

The additional availability sessions were appreciated by the residents and our local community. You worked diligently with us to ensure that the health and safety of the residents of Jacksonville were addressed at the community meetings. Teamwork was vital to our success and your organization was a key player. I am confident that our shared commitment to excellence and partnership will better prepare us to respond to all matters of public health and safety in the near future.

***Response:** EPA appreciates the sentiment expressed in these opening paragraphs. EPA has also found the working relationship with the Department of Health worthwhile and useful as the Agency has tried to address the many challenging aspects associated with the Jacksonville Ash Site.*

Below is a list of recommendations from the Duval County Health Department from their review.

- All properties within the delineation of contaminated areas should be required to be remediated with appropriate engineering and institutional controls to reduce or eliminate exposure to contaminants. This should also include properties that have crawl spaces located under them where children and pets could be potentially exposed.

Response: *EPA believes that Institutional Control mechanisms identified in this ROD, namely governmental controls and voluntary proprietary controls (deed restrictions), along with EPA monitoring of the control will be successful in insuring that engineering controls remain in place (and effective). It is not EPA policy to force deed restrictions onto private property owners. During the Remedial Design, EPA will explore several forms of Institutional Controls with the City of Jacksonville including annual notification letters and the possible use of Florida's real estate statute.*

Risk associated with elevated soil lead levels is directly proportional to the duration and frequency of exposure. Although EPA believes that the soil under crawl spaces are not frequented nor is the duration such that unacceptable risks occur, in an attempt to eliminate any possible direct exposure to soil in open crawl space that are accessible to children, the remedy has been modified to include placement of a geotextile mat topped with a layer of gravel.

- The remedial goals for contaminants should be set according to the Florida Administrative Code Chapter 62-780, Contaminated Site Cleanup Criteria for all Jacksonville Ash Sites and Brown's Dump.

Response: *The Agency has recognized the carcinogenic risk level of 10^{-6} and the noncarcinogenic hazard index of 1 as ARARs. As such, the remedial goals in the ROD were selected to meet these risk levels.*

- The proposal should allow removal of up to 3 feet of soil to minimize the amount of contaminated media left subsurface. **The current proposal does not adequately address the remediation strategy for the contaminated media surrounding trees and shrubbery.*

Response: *At EPA lead sites, the Agency's experience is that a minimum of one foot of clean soil should establish an adequate barrier from contaminated soil in a residential yard for the protection of human health. The rationale for establishing a minimum cover thickness of one foot is that the top 12 inches of soil in a residential yard can be considered to be available for direct human contact. For those areas used for vegetable gardening purposes, EPA recommends 2 feet. EPA is expanding on EPA's recommended practice by using 2 feet, not one foot, at the Jacksonville Ash Site. It is EPA technical judgement that this interval is protective, and there is no need to increase this interval to 3 feet.*

If property owners do not wish vegetation to be removed (e.g., trees), then hand digging around such vegetation will occur. However, the target depth of two feet might not be reached (i.e., soil removal will have to be to a practicable extent). EPA believes that the risk associated with contaminated soil remaining above RGs under bushes, trees, etc. is minor. Risk in a residential setting is apportioned across the entire property. In other words, the exposure area is the

specific parcel under review. EPA believes that spatially averaged (i.e., mean, composite) concentrations best represents exposure to site contaminants over the long term. For risk assessment purposes, any individual is assumed to move randomly across the exposure area over time. It is not believed that the small pockets of remaining contamination associated with trees, bushes, etc. will pose an unacceptable risk.

- The owner shall execute an agreement with the City of Jacksonville, under which the owner agrees to have a covenant placed upon the deed that restricts excavation, construction, conveyance, sale or other transfer of title of the property within the delineated areas.

Response: *Although the comment, as written, states that the Department of Health recommends that property within the delineated areas cannot be conveyed, sold or transferred, EPA interprets the comment to actually mean that such property transfers can occur but with proper notification as offered in the recommended covenant.*

EPA believes that Institutional Control mechanisms identified in this ROD, namely governmental controls and voluntary proprietary controls (deed restrictions), along with EPA monitoring of the control will be successful in addressing the State's concern that engineering controls remain in place (and effective). It is not EPA policy to force deed restrictions onto private property owners. EPA does not view a specific Institutional Control mechanism in isolation. The selected remedy's approach is to identify several specific types of Institutional Controls for use in meeting the objective of preventing and/or managing potential human exposure to subsurface soil contamination remaining above RGs while the responsibility for monitoring the implementation and effectiveness of the control will be with EPA. During the Remedial Design, EPA will explore several forms of Institutional Controls with the City of Jacksonville including annual notification letters and the possible use of Florida's real estate statute.

PART 14: COMMUNITY RELATIONS WHEN THE RECORD OF DECISION IS SIGNED (NCP §300.430(f)(6)(i) and (ii))

14.1 Public Notice of Availability of ROD (NCP §300.430(f)(6)(i))

The availability of the ROD will be public noticed in the Florida Times Union within thirty (30) calendar days from signature of the ROD.

14.2 Availability of ROD (NCP §300.430(f)(6)(ii))

Upon signature, the ROD will be included in the Administrative Record. The updated Administrative Record will be sent to the local repositories within thirty (30) calendar days of signature of the ROD. The local repositories are located at:

Emmett Reed Center 1093 West 6th Street Jacksonville, Florida 32209 (904) 630-0958	Jacksonville Urban League 903 West Union Street Jacksonville, Florida 32204 (904) 366-3461	Bradham Brooks Public Library 1755 W. Edgewood Avenue Jacksonville, Florida 32208 (904) 765-5402

Supporting information for the ROD is already in the Administrative Record, which also resides at the local repositories.

PART 15: REFERENCES

The references listed below are the documents used in writing this ROD.

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Appendix A

Cancer Risk Assessment Summary - Reasonable Maximum Exposure
(Tables 10.1 thru 10.13 from BHHRA)

TABLE 10.4 RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
FOREST STREET INCINERATOR

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Child and Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	Forest Street Site Proper Area 1	CPAH (TEF)	6.3E-006		4.2E-006	1.1E-005						
			2,3,7,8-TCDD (TEQ)	1.0E-005		7.8E-007	1.1E-005						
			Arsenic	8.9E-006		3.7E-007	9.3E-006						
			(Total)	2.5E-005		5.4E-006	3E-005						
Water	Surface Water	McCoy's Creek	CPAHs	3.4E-007		3.9E-004	3.9E-004						
			(Total)	3.4E-007		3.9E-004	4E-004						
Total Risk Across All Media and All Exposure Routes							4E-004	Total Hazard Index Across All Media and All Exposure Routes					

TABLE 10.5 RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
FOREST STREET INCINERATOR

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child and Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Subsurface Soil	Forest Street Site Proper Area 1	CPAH (TEF)	3.8E-006		2.5E-006	6.3E-006						
			2,3,7,8-TCDD (TEQ)	1.3E-005		1.0E-005	2.3E-005						
			Arsenic	5.1E-004		2.1E-005	5.3E-004						
			(Total)	5.3E-004		3.4E-005	6E-004						
Water	Surface Water	McCoy's Creek	CPAHs	3.4E-007		3.9E-004	3.9E-004						
			(Total)	3.4E-007		3.9E-004	4E-004						
Total Risk Across All Media and All Exposure Routes							1E-003	Total Hazard Index Across All Media and All Exposure Routes					

TABLE 10.5a RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
FOREST STREET INCINERATOR

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child and Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	Area North of McCoy's Creek	Arsenic	5.3E-006		2.2E-007	5.5E-006						
			(Total)	5.3E-006		2.2E-007	6E-006						
Water	Surface Water	McCoy's Creek	CPAHs	3.4E-007		3.9E-004	3.9E-004						
			(Total)	3.4E-007		3.9E-004	4E-004						
Total Risk Across All Media and All Exposure Routes							4E-004	Total Hazard Index Across All Media and All Exposure Routes					

TABLE 10.3.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
5TH & CLEVELAND

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child and Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	Emmett Reed Community Center											
			CPAHs	2.6E-006		1.8E-006	4.4E-006						
			2,3,7,8-TCDD (TEQ) Dioxin	7.4E-006		5.8E-006	1.3E-005						
			Arsenic	5.0E-006		2.1E-007	5.2E-006						
			(Total)	1.5E-005		7.8E-006	2.3E-005						
Surface Water	Surface Water	Unnamed Creek											
			CPAHs	1.0E-008		1.2E-005	1.2E-005						
			(Total)	1.0E-008		1.2E-005	1.2E-005						
Groundwater	Groundwater	Tap											
			1,2-Dibromo-3-Chloropropanol	6.5E-005	5.8E-008	4.2E-005	1.1E-004						
			PCB-1242 (Arochlor 1242)	2.1E-005	--	--	2.1E-005						
			Arsenic	4.7E-005		--	4.7E-005						
			(Total)	1.3E-004	5.8E-008	4.2E-005	1.8E-004						
			Total Risk Across All Media and All Exposure Routes				2E-004		Total Hazard Index Across All Media and All Exposure Routes				

TABLE 10.4.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
5TH & CLEVELAND

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child and Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Subsurface Soil	Emmett Reed Community Center											
			CPAHs	4.7E-006	--	3.2E-006	7.9E-006						
			2,3,7,8-TCDD (TEQ)	4.5E-006	--	3.5E-006	8.0E-006						
			Arsenic	3.3E-005	--	1.4E-006	3.4E-005						
			(Total)	4.2E-005		8.1E-006	5.0E-005						
Surface Water	Surface Water	Unnamed Creek											
			CPAHs	1.0E-008		1.2E-005	1.2E-005						
			(Total)	1.0E-008		1.2E-005	1.2E-005						
Groundwater	Groundwater	Tap											
			1,2-Dibromo-3-Chloropropanol	6.5E-005	5.8E-008	4.2E-005	1.1E-004						
			PCB-1242 (Arochlor 1242)	2.1E-005	--	--	2.1E-005						
			Arsenic	4.7E-005		--	4.7E-005						
			(Total)	1.3E-004	5.8E-008	4.2E-005	1.8E-004						
Total Risk Across All Media and All Exposure Routes							2E-004	Total Hazard Index Across All Media and All Exposure Routes					

TABLE 10.8.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
5TH & CLEVELAND

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child and Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	The Park - Emmett Reed											
			CPAHs	3.7E-005		2.5E-005	6.2E-005						
			2,3,7,8-TCDD (TEQ) Dioxin	5.0E-006		3.9E-006	8.9E-006						
			PCB-1260 (Aroclor 1260)	1.6E-006		1.2E-006	2.8E-006						
			Arsenic	3.3E-005		1.4E-006	3.4E-005						
			(Total)	7.7E-005		3.2E-005	1.1E-004						
Surface Water	Surface Water	Unnamed Creek											
			CPAHs	1.0E-008		1.2E-005	1.2E-005						
			(Total)	1.0E-008		1.2E-005	1.2E-005						
Groundwater	Groundwater	Tap											
			1,2-Dibromo-3-Chloropropanol	6.5E-005	5.8E-008	4.2E-005	1.1E-004						
			PCB-1242 (Arochlor 1242)	2.1E-005	--	--	2.1E-005						
			Arsenic	4.7E-005		--	4.7E-005						
			(Total)	1.3E-004	5.8E-008	4.2E-005	1.8E-004						
Total Risk Across All Media and All Exposure Routes							3E-004	Total Hazard Index Across All Media and All Exposure Routes					

TABLE 10.9.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
5TH & CLEVELAND

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child and Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Subsurface Soil	The Park - Emmett Reed											
			CPAHs	2.9E-005		2.0E-005	4.9E-005						
			Arsenic	7.6E-005		3.2E-006	7.9E-005						
			(Total)	1.1E-004		2.3E-005	1.3E-004						
Surface Water	Surface Water	Unnamed Creek											
			CPAHs	1.0E-008		1.2E-005	1.2E-005						
			(Total)	1.0E-008		1.2E-005	1.2E-005						
Groundwater	Groundwater	Tap											
			1,2-Dibromo-3-Chloropropanol	6.5E-005	5.8E-008	4.2E-005	1.1E-004						
			PCB-1242 (Arochlor 1242)	2.1E-005	--	--	2.1E-005						
			Arsenic	4.7E-005		--	4.7E-005						
			(Total)	1.3E-004	5.8E-008	4.2E-005	1.8E-004						
Total Risk Across All Media and All Exposure Routes							3E-004	Total Hazard Index Across All Media and All Exposure Routes					

TABLE 10.12.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
5TH & CLEVELAND

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child and Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	Apartment Complex											
			CPAHs	2.3E-006		1.6E-006	3.9E-006						
			2,3,7,8-TCDD (TEQ) Dioxin	1.3E-006		1.0E-006	2.3E-006						
			Arsenic	2.8E-006		1.2E-007	2.9E-006						
			(Total)	6.4E-006		2.7E-006	9.1E-006						
Surface Water	Surface Water	Unnamed Creek											
			CPAHs	1.0E-008		1.2E-005	1.2E-005						
			(Total)	1.0E-008		1.2E-005	1.2E-005						
Groundwater	Groundwater	Tap											
			1,2-Dibromo-3-Chloropropanol	6.5E-005	5.8E-008	4.2E-005	1.1E-004						
			PCB-1242 (Arochlor 1242)	2.1E-005	--	--	2.1E-005						
			Arsenic	4.7E-005		--	4.7E-005						
			(Total)	1.3E-004	5.8E-008	4.2E-005	1.8E-004						
Total Risk Across All Media and All Exposure Routes							2E-004	Total Hazard Index Across All Media and All Exposure Routes					

TABLE 10.13.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
5TH & CLEVELAND

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child and Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Subsurface Soil	Apartment Complex											
			CPAHs	2.5E-006	--	1.7E-006	4.2E-006						
			Arsenic	1.6E-005	--	6.6E-007	1.7E-005						
			(Total)	1.9E-005		2.4E-006	2.1E-005						
Surface Water	Surface Water	Unnamed Creek											
			CPAHs	1.0E-008		1.2E-005	1.2E-005						
			(Total)	1.0E-008		1.2E-005	1.2E-005						
Groundwater	Groundwater	Tap											
			1,2-Dibromo-3-Chloropropanol	6.5E-005	5.8E-008	4.2E-005	1.1E-004						
			PCB-1242 (Arochlor 1242)	2.1E-005	--	--	2.1E-005						
			Arsenic	4.7E-005		--	4.7E-005						
			(Total)	1.3E-004	5.8E-008	4.2E-005	1.8E-004						
Total Risk Across All Media and All Exposure Routes							2E-004	Total Hazard Index Across All Media and All Exposure Routes					

TABLE 10.1.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
LONNIE C. MILLER

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil/Sediment	Lonnie C. Miller Park	CPAH (TEF)	4.4E-006		2.9E-06	7.3E-06	Antimony	Blood	1.2E+000		2.4E+000	3.6E+000
			2,3,7,8-TCDD	1.1E-05		8.6E-06	2.0E-05	Arsenic	Skin	7.6E-001		1.6E-002	7.8E-001
								Cadmium	Kidney	2.1E-001		8.5E-002	3.0E-001
								Chromium	Skin	4.8E-001		4.8E-001	9.6E-001
								Copper	GI Tract	1.3E+000		1.3E-001	1.4E+000
								Iron	Unknown	8.7E+000		1.2E+000	9.9E+000
								Lead	Unknown	--		--	--
								Manganese	CNS	9.6E-001		9.6E-002	1.1E+000
								Thallium	Unknown	2.6E-001		3.5E-002	3.0E-001
								Zinc	Blood	2.3E-001		2.3E-002	2.5E-001
			(Total)	1.5E-05		1.2E-05	2.7E-05	(Total)		13.4		4.5	17.9
Surface Water	Surface Water	Unnamed Tributary	CPAHs	4.1E-007		4.7E-004	4.7E-004						
			(Total)	4.1E-007		4.7E-004	4.7E-004						
			Total Risk Across All Media and All Exposure Routes				5E-04	Total Hazard Index Across All Media and All Exposure Routes					18

Total Skin HI =	2
Total Kidney HI =	0.3
Total GI Tract HI =	1
Total Unknown HI =	10
Total Blood HI =	4
Total CNS HI =	0.4

TABLE 10.2 RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
LONNIE C. MILLER

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil/Sediment	Lonnie C. Miller Park	CPAH (TEF)	4.4E-006		2.9E-06	7.3E-06
			2,3,7,8-TCDD	1.1E-05		8.6E-06	2E-05
			(Total)	1.5E-05		1.2E-05	2.7E-05
Surface Water	Surface Water	Unnamed Tributary	CPAHs	4.1E-007		4.7E-004	4.7E-004
			(Total)	4.1E-007		4.7E-004	4.7E-004
Groundwater	Groundwater	Surficial Aquifer	Vinly Chloride	1.1E-005	6.3E-008	5.9E-006	1.7E-005
			(Total)	1.2E-005	6.3E-008	5.9E-06	1.7E-05
Total Risk Across All Media and All Exposure Routes							5E-04

Chemical	Non-Carcinogenic Hazard Quotient				
	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Antimony	Blood	1.2E+000		2.4E+000	3.6E+000
Arsenic	Skin	7.6E-001		1.6E-002	7.8E-001
Cadmium	Kidney	2.1E-001		8.5E-002	3.0E-001
Chromium	Skin	4.8E-001		4.8E-001	9.6E-001
Copper	GI Tract	1.3E+000		1.3E-001	1.4E+000
Iron	Unknown	8.7E+000		1.2E+000	9.9E+000
Lead	Unknown	--		--	--
Manganese	CNS	9.6E-001		9.6E-002	1.1E+000
Thallium	Unknown	2.6E-001		3.5E-002	3.0E-001
Zinc	Blood	2.3E-001		2.3E-002	2.5E-001
(Total)		13.4		4.5	17.9
1,2-Dichloroethylene	Blood	1.0E-001	--	5.1E-002	1.5E-001
Cresol M & P	CNS	9.6E-001	--	--	9.6E-01
Cadmium	Kidney	4.4E-001	--	--	4.4E-001
Manganese	CNS	3.8E-001	--	--	3.8E-001
(Total)		1.9		0.051	2.0
Total Hazard Index Across All Media and All Exposure Routes					20

Total Skin HI =	2
Total Kidney HI =	0.7
Total CNS HI =	2
Total Unknown HI =	10
Total Blood HI =	4
Total GI Tract HI =	1

TABLE 10.3.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
LONNIE C. MILLER

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Subsurface Soil	Lonnie C. Miller Park	CPAHs	5.0E-006		3.4E-006	8.4E-006	PCB-1254 (Aroclor 1254	Unknown	4.8E-01		4.8E-02	5.3E-01
			PCB-1254 (Aroclor 1254	1.6E-07		1.3E-06	1.5E-06	Antimony	Blood	2.0E+000		4.0E+000	6.0E+000
			2,3,7,8-TCDD	1.5E-05		1.2E-05	2.7E-05	Arsenic	Skin	2.5E+000		5.2E-002	2.6E+000
			Arsenic	9.6E-005		4.0E-006	1.0E-004	Cadmium	Kidney	4.7E-001		1.9E-001	6.6E-001
								Chromium (Total)	Skin	6.2E-001		6.2E-001	1.2E+000
								Copper	GI Tract	1.6E+000		1.6E-001	1.8E+000
								Iron	Unknown	1.3E+001		1.7E+000	1.5E+001
								Lead	Unknown	--		--	--
								Manganese	CNS	3.2E+000		3.2E-001	3.5E+000
								Nickel	Body Weight	2.2E-001		1.7E-002	2.4E-001
								Thallium	Unknown	2.6E-001		3.5E-002	3.0E-001
								Zinc	Blood	1.6E-001		1.6E-002	1.8E-001
			(Total)	1.2E-04		2.1E-05	1.4E-04	(Total)		22.2		7.2	29.8
Surface Water	Surface Water	Unnamed Tributary	CPAHs	4.1E-007		4.7E-004	4.7E-004						
			(Total)	4.1E-007		4.7E-004	4.7E-004						
Groundwater	Groundwater	Surficial Aquifer	Vinyl Chloride	1.1E-005	6.3E-008	5.9E-006	1.7E-005	1,2-Dichloroethylene	Blood	1.0E-001	--	5.1E-002	1.5E-001
								Cresol M & P	CNS	9.6E-001	--	--	9.6E-01
								Cadmium	Kidney	4.4E-001	--	--	4.4E-001
								Manganese	CNS	3.8E-001	--	--	3.8E-001
			(Total)	1.1E-05	6.3E-008	5.9E-06	1.7E-05	(Total)		1.9		0.051	2.0
			Total Risk Across All Media and All Exposure Routes				6E-04	Total Hazard Index Across All Media and All Exposure Routes					20

Total Skin HI =	4
Total Kidney HI =	1
Total CNS HI =	3
Total Blood HI =	6
Total GI Tract HI =	2
Total Unknown HI =	16
Total Body Weight HI =	0.2

Appendix B

Non-Cancer Risk Assessment Summary - Reasonable Maximum Exposure (Tables 10.1 thru 10.11 from BHHRA)

TABLE 10.1.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
FOREST STREET INCINERATOR

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	Forest Street Site Proper Area 1					
Total Risk Across All Media and All Exposure Routes							

Chemical	Non-Carcinogenic Hazard Quotient				
	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Antimony	Blood	6.2E-001		1.2E+000	1.9E+000
Arsenic	Skin	2.1E-001		4.8E-003	2.1E-001
Cadmium	Kidney	1.2E-001		4.8E-002	1.7E-001
Chromium	Skin	1.1E-001		1.1E-001	2.3E-001
Copper	GI Tract	2.6E-001		2.6E-002	2.8E-001
Iron	Unknown	1.2E+000		1.7E-001	1.4E+000
(Total)		2.5		1.6	4
Total Hazard Index Across All Media and All Exposure Routes					4

Total Skin HI =	0.4
Total Kidney HI =	0.2
Total GI Tract HI=	0.3
Total Unknown HI =	1
Total Blood HI =	2

TABLE 10.2 RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
FOREST STREET INCINERATOR

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	Forest Street Site Proper Area 1						Antimony	Blood	6.2E-001		1.2E+000	1.9E+000
								Arsenic	Skin	2.1E-001		4.8E-003	2.1E-001
								Cadmium	Kidney	1.2E-001		4.8E-002	1.7E-001
								Chromium	Skin	1.1E-001		1.1E-001	2.3E-001
								Copper	GI Tract	2.6E-001		2.6E-002	2.8E-001
								Iron	Unknown	1.2E+000		1.7E-001	1.4E+000
								(Total)		2.5		1.6	4
Water	Groundwater	Tap						Barium	Kidney	3.0E-001		--	3.0E-001
								Iron	Unknown	3.4E+000		--	3.4E+000
								Manganese	CNS	1.7E+000		--	1.7E+000
								(Total)		5.4		--	5.4
Total Risk Across All Media and All Exposure Routes									Total Hazard Index Across All Media and All Exposure Routes				9

Total Skin HI =	0.4
Total Kidney HI =	0.5
Total CNS HI =	2
Total Unknown HI =	5
Total Blood HI =	2

TABLE 10.3.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
FOREST STREET INCINERATOR

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Subsurface Soil	Forest Street Site Proper Area 1					
Water	Groundwater	Tap					
Total Risk Across All Media and All Exposure Routes							

Chemical	Non-Carcinogenic Hazard Quotient				
	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Antimony	Blood	2.5E+000		5.0E+000	7.5E+000
Arsenic	Skin	1.3E+001		2.8E-001	1.4E+001
Barium	Kidney	2.8E-001		8.0E-002	3.6E-001
Cadmium	Kidney	3.4E+002		1.4E+002	4.7E+002
Chromium (Total)	Skin	1.6E-001		1.6E-001	3.2E-001
Cobalt	Unknown	1.1E-001		1.1E-002	1.3E-001
Copper	GI Tract	2.3E+001		2.3E+000	2.5E+001
Iron	Unknown	6.5E+000		8.7E-001	7.4E+000
Lead	Unknown	--		--	--
Manganese	CNS	3.3E-001		1.3E-001	4.7E-001
Nickel	Body Weight	1.3E-001		9.6E-003	1.4E-001
Silver	Skin	4.7E-001		4.7E-002	5.1E-001
Thallium	Unknown	8.4E-001		1.1E-001	9.6E-001
Vanadium	Unknown	3.7E+000		3.7E-001	4.1E+000
Zinc	Blood	1.6E-001		1.6E-002	1.8E-001
(Total)		391		147	538
Barium	Kidney	3.0E-001		--	3.0E-001
Iron	Unknown	3.4E+000		--	3.4E+000
Manganese	CNS	1.7E+000		--	1.7E+000
(Total)		5.4		--	5.4
Total Hazard Index Across All Media and All Exposure Routes					543

Total Skin HI =	14
Total Kidney HI =	471
Total CNS HI =	2
Total Blood HI =	8
Total GI Tract HI =	25
Total Unknown HI =	16
Total Body Weight HI =	0.1

TABLE 10.3.a.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
FOREST STREET INCINERATOR

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface soil	Area North of McCoy's Creek					
			(Total)				
Water	Groundwater	Tap					
			(Total)				
Total Risk Across All Media and All Exposure Routes							

Chemical	Non-Carcinogenic Hazard Quotient				
	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Arsenic	Skin	1.4E-001		2.9E-003	1.4E-001
Iron	Unknown	2.5E-001		3.4E-002	2.8E-001
(Total)		0.4		0.04	0.4
Barium	Kidney	3.0E-001		--	3.0E-001
Iron	Unknown	3.4E+000		--	3.4E+000
Manganese	CNS	1.7E+000		--	1.7E+000
(Total)		5.4		--	5.4
Total Hazard Index Across All Media and All Exposure Routes					6

Total Skin HI =	0.1
Total Kidney HI =	0.3
Total CNS HI =	2
Total Unknown HI =	4

TABLE 10.3.b.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
FOREST STREET INCINERATOR

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Subsurface soil	Area North of McCoy's Creek					
Water	Groundwater	Tap					
Total Risk Across All Media and All Exposure Routes							

Chemical	Non-Carcinogenic Hazard Quotient				
	Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Arsenic	Skin	1.3E-001		2.8E-003	1.3E-001
Iron	Unknown	2.6E-001		3.4E-002	2.9E-001
(Total)		0.4		0.04	0.4
Barium	Kidney	3.0E-001		--	3.0E-001
Iron	Unknown	3.4E+000		--	3.4E+000
Manganese	CNS	1.7E+000		--	1.7E+000
(Total)		5.4		--	5.4
Total Hazard Index Across All Media and All Exposure Routes					6

Total Skin HI =	0.1
Total Kidney HI =	0.3
Total CNS HI =	2
Total Unknown HI =	4

TABLE 10.1.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
5TH & CLEVELAND

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Tot
Soil	Surface Soil	Emmett Reed Community Center						Antimony	Blood	5.9E-002		1.2E-001	1.8E-001
								Arsenic	Skin	1.3E-001		2.7E-003	1.3E-001
								Iron	Unknown	3.0E-001		4.0E-002	3.4E-001
			(Total)					(Total)		0.5		0.2	0.7
Groundwater	Groundwater	Tap						1,2-Dibromo-3-Chloropropanol	Testicles	--	1.7E+000	--	1.7E+000
								Arsenic	Skin	4.5E-001		--	4.5E-001
								Iron	Unknown	8.4E-001		--	8.4E-001
			(Total)					(Total)		1.3	1.7	--	3
			Total Risk Across All Media and All Exposure Routes						Total Hazard Index Across All Media and All Exposure Routes				4

Total Skin HI =	0.6
Total Blood HI =	0.2
Total Testicles HI =	2
Total Unknown HI =	1

TABLE 10.2.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
5TH & CLEVELAND

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Subsurface Soil	Emmett Reed Community Center						Antimony	Blood	5.5E-001		1.1E+000	1.7E+000
								Arsenic	Skin	8.7E-001		1.8E-002	8.9E-001
								Barium	Kidney	2.0E-001		5.8E-002	2.6E-001
								Cadmium	Kidney	1.0E-001		6.3E-006	1.0E-001
								Chromium	Skin	1.6E-001		1.6E-001	3.2E-001
								Copper	GI Tract	2.2E-001		2.2E-002	2.4E-001
								Iron	Unknown	2.6E+000		3.4E-001	2.9E+000
								Manganese	CNS	1.5E-001		6.1E-002	2.1E-001
			(Total)					(Total)		4.9		1.8	7
Groundwater	Groundwater	Tap						1,2-Dibromo-3-Chloropropanol	Testicles	--	1.7E+000	--	1.7E+000
								Arsenic	Skin	4.5E-001		--	4.5E-001
								Iron	Unknown	8.4E-001		--	8.4E-001
			(Total)					(Total)		1.3	1.7	--	3
			Total Risk Across All Media and All Exposure Routes						*Total Hazard Index Across All Media and All Exposure Routes*				10

Total Skin HI =	2
Total Kidney HI =	0.4
Total CNS HI =	0.2
Total Blood HI =	2
Total GI Tract HI =	0.2
Total Testicles HI =	2
Total Unknown HI =	4

TABLE 10.5.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
5TH & CLEVELAND

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	The Park - Emmett Reed						Antimony	Blood	3.0E+001		5.9E+001	8.9E+001
								Arsenic	Skin	8.7E-001		1.8E-002	8.9E-001
								Barium	Kidney	1.0E-001		2.9E-002	1.3E-001
								Cadmium	Kidney	1.3E-001		5.1E-002	1.8E-001
								Chromium	Skin	1.2E-001		1.2E-001	2.4E-001
								Copper	GI Tract	1.4E-001		1.4E-002	1.5E-001
								Iron	Unknown	1.4E+000		1.9E-001	1.6E+000
								(Total)		33		59	92
Total Risk Across All Media and All Exposure Routes								Total Hazard Index Across All Media and All Exposure Routes					92

Total Skin HI =	1
Total Kidney HI =	0.3
Total Blood HI =	89
Total GI Tract HI =	0.2
Total Unknown HI =	2

TABLE 10.6.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
5TH & CLEVELAND

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	The Park - Emmett Reed						Antimony	Blood	3.0E+001		5.9E+001	8.9E+001
								Arsenic	Skin	8.7E-001		1.8E-002	8.9E-001
								Barium	Kidney	1.0E-001		2.9E-002	1.3E-001
								Cadmium	Kidney	1.3E-001		5.1E-002	1.8E-001
								Chromium	Skin	1.2E-001		1.2E-001	2.4E-001
								Copper	GI Tract	1.4E-001		1.4E-002	1.5E-001
								Iron	Unknown	1.4E+000		1.9E-001	1.6E+000
								(Total)		33		59	92
Groundwater	Groundwater	Tap						1,2-Dibromo-3-Chloropropanol	Testicles	--	1.7E+000	--	1.7E+000
								Arsenic	Skin	4.5E-001		--	4.5E-001
								Iron	Unknown	8.4E-001		--	8.4E-001
								(Total)		1.3	1.7	--	3
Total Risk Across All Media and All Exposure Routes								Total Hazard Index Across All Media and All Exposure Routes					95

Total Skin HI =	2
Total Kidney HI =	0.3
Total Blood HI =	89
Total GI Tract HI =	0.2
Total Testicles HI =	2
Total Unknown HI =	2

TABLE 10.7.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
5TH & CLEVELAND

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Tot
Soil	Subsurface Soil	The Park - Emmett Reed						Aluminum	Unknown	1.0E-001		2.1E-002	1.2E-001
								Antimony	Blood	3.9E-001		7.8E-001	1.2E+000
								Arsenic	Skin	2.0E+000		4.1E-002	2.0E+000
								Barium	Kidney	1.4E-001		3.9E-002	1.8E-001
								Cadmium	Kidney	2.3E-001		9.4E-002	3.2E-001
								Chromium	Skin	1.8E-001		1.8E-001	3.6E-001
								Copper	GI Tract	3.3E-001		3.3E-002	3.6E-001
								Iron	Unknown	3.3E+000		4.3E-001	3.7E+000
								Manganese	CNS	1.4E-001		5.4E-002	1.9E-001
								Zinc	Unknown	1.2E-001		1.2E-002	1.3E-001
								(Total)		7		1.7	9
Groundwater	Groundwater	Tap						1,2-Dibromo-3-Chloropropanol	Testicles	--	1.7E+000	--	1.7E+000
								Arsenic	Skin	4.5E-001	--	--	4.5E-001
								Iron	Unknown	8.4E-001	--	--	8.4E-001
								(Total)		1.3	1.7	--	3
Total Risk Across All Media and All Exposure Routes								Total Hazard Index Across All Media and All Exposure Routes					12

Total Skin HI =	3
Total Kidney HI =	0.5
Total Blood HI =	1
Total CNS HI =	0.2
Total GI Tract HI =	0.4
Total Testicles HI =	2
Total Unknown HI =	5

TABLE 10.10.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
5TH & CLEVELAND

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	Apartment Complex						Iron	Unknown	2.1E-001		2.8E-002	2.4E-001
								(Total)		0.2		0.03	0.2
Groundwater	Groundwater	Tap						1,2-Dibromo-3-Chloropropanol	Testicles	--	1.7E+000	--	1.7E+000
								Arsenic	Skin	4.5E-001		--	4.5E-001
								Iron	Unknown	8.4E-001		--	8.4E-001
								(Total)		1.3	1.7	--	3
Total Risk Across All Media and All Exposure Routes								Total Hazard Index Across All Media and All Exposure Routes					3

Total Skin HI =	0.5
Total Testicles HI =	2
Total Unknown HI =	1

TABLE 10.11.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
5TH & CLEVELAND

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Tota
Soil	Subsurface Soil	Apartment Complex						Antimony	Blood	2.5E-001		5.1E-001	7.6E-001
								Arsenic	Skin	4.2E-001		8.6E-003	4.3E-001
								Copper	GI Tract	1.1E-001		1.1E-002	1.2E-001
								Iron	Unknown	6.9E-001		9.2E-002	7.8E-001
								(Total)		1.5		0.6	2.1
Groundwater	Groundwater	Tap						1,2-Dibromo-3-Chloropropanol	Testicles	--	1.7E+000	--	1.7E+000
								Arsenic	Skin	4.5E-001	--	--	4.5E-001
								Iron	Unknown	8.4E-001	--	--	8.4E-001
								(Total)		1.3	1.7	--	3
Total Risk Across All Media and All Exposure Routes								Total Hazard Index Across All Media and All Exposure Routes					5

Total Skin HI =	0.9
Total Blood HI =	0.8
Total GI Tract HI =	0.1
Total Testicles HI =	2
Total Unknown HI =	2

TABLE 10.1.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
LONNIE C. MILLER

Scenario Timeframe: Current
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil/Sediment	Lonnie C. Miller Park	CPAH (TEF)	4.4E-006		2.9E-06	7.3E-06	Antimony	Blood	1.2E+000		2.4E+000	3.6E+000
			2,3,7,8-TCDD	1.1E-05		8.6E-06	2.0E-05	Arsenic	Skin	7.6E-001		1.6E-002	7.8E-001
								Cadmium	Kidney	2.1E-001		8.5E-002	3.0E-001
								Chromium	Skin	4.8E-001		4.8E-001	9.6E-001
								Copper	GI Tract	1.3E+000		1.3E-001	1.4E+000
								Iron	Unknown	8.7E+000		1.2E+000	9.9E+000
								Lead	Unknown	--		--	--
								Manganese	CNS	9.6E-001		9.6E-002	1.1E+000
								Thallium	Unknown	2.6E-001		3.5E-002	3.0E-001
								Zinc	Blood	2.3E-001		2.3E-002	2.5E-001
			(Total)	1.5E-05		1.2E-05	2.7E-05	(Total)		13.4		4.5	17.9
Surface Water	Surface Water	Unnamed Tributary	CPAHs	4.1E-007		4.7E-004	4.7E-004						
			(Total)	4.1E-007		4.7E-004	4.7E-004						
Total Risk Across All Media and All Exposure Routes							5E-04	Total Hazard Index Across All Media and All Exposure Routes					18

Total Skin HI =	2
Total Kidney HI =	0.3
Total GI Tract HI=	1
Total Unknown HI =	10
Total Blood HI =	4
Total CNS HI =	0.4

TABLE 10.2 RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
LONNIE C. MILLER

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil/Sediment	Lonnie C. Miller Park	CPAH (TEF)	4.4E-006		2.9E-06	7.3E-06	Antimony	Blood	1.2E+000		2.4E+000	3.6E+000
			2,3,7,8-TCDD	1.1E-05		8.6E-06	2E-05	Arsenic	Skin	7.6E-001		1.6E-002	7.8E-001
								Cadmium	Kidney	2.1E-001		8.5E-002	3.0E-001
								Chromium	Skin	4.8E-001		4.8E-001	9.6E-001
								Copper	GI Tract	1.3E+000		1.3E-001	1.4E+000
								Iron	Unknown	8.7E+000		1.2E+000	9.9E+000
								Lead	Unknown	--		--	--
								Manganese	CNS	9.6E-001		9.6E-002	1.1E+000
								Thallium	Unknown	2.6E-001		3.5E-002	3.0E-001
								Zinc	Blood	2.3E-001		2.3E-002	2.5E-001
			(Total)	1.5E-05		1.2E-05	2.7E-05	(Total)		13.4		4.5	17.9
Surface Water	Surface Water	Unnamed Tributary	CPAHs	4.1E-007		4.7E-004	4.7E-004						
			(Total)	4.1E-007		4.7E-004	4.7E-004						
Groundwater	Groundwater	Surficial Aquifer	Vinly Chloride	1.1E-005	6.3E-008	5.9E-006	1.7E-005	1,2-Dichloroethylene	Blood	1.0E-001	--	5.1E-002	1.5E-001
								Cresol M & P	CNS	9.6E-001	--	--	9.6E-01
								Cadmium	Kidney	4.4E-001	--	--	4.4E-001
								Manganese	CNS	3.8E-001	--	--	3.8E-001
			(Total)	1.2E-005	6.3E-008	5.9E-06	1.7E-05	(Total)		1.9		0.051	2.0
Total Risk Across All Media and All Exposure Routes							5E-04	Total Hazard Index Across All Media and All Exposure Routes					20

Total Skin HI =	2
Total Kidney HI =	0.7
Total CNS HI =	2
Total Unknown HI =	10
Total Blood HI =	4
Total GI Tract HI =	1

TABLE 10.3.RME
RISK ASSESSMENT SUMMARY
REASONABLE MAXIMUM EXPOSURE
JACKSONVILLE ASH SITES
LONNIE C. MILLER

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Subsurface Soil	Lonnie C. Miller Park	CPAHs	5.0E-006		3.4E-006	8.4E-006	PCB-1254 (Aroclor 1254	Unknown	4.8E-01		4.8E-02	5.3E-01
			PCB-1254 (Aroclor 1254	1.6E-07		1.3E-06	1.5E-06	Antimony	Blood	2.0E+000		4.0E+000	6.0E+000
			2,3,7,8-TCDD	1.5E-05		1.2E-05	2.7E-05	Arsenic	Skin	2.5E+000		5.2E-002	2.6E+000
			Arsenic	*9.6E-005*		*4.0E-006*	*1.0E-004*	*Cadmium*	*Kidney*	*4.7E-001*		1.9E-001	6.6E-001
								Chromium (Total)	Skin	6.2E-001		6.2E-001	1.2E+000
								Copper	GI Tract	1.6E+000		1.6E-001	1.8E+000
								Iron	Unknown	1.3E+001		1.7E+000	1.5E+001
								Lead	Unknown	--		--	--
								Manganese	CNS	3.2E+000		3.2E-001	3.5E+000
								Nickel	Body Weight	2.2E-001		1.7E-002	2.4E-001
								Thallium	Unknown	2.6E-001		3.5E-002	3.0E-001
								Zinc	Blood	1.6E-001		1.6E-002	1.8E-001
			(Total)	1.2E-04		2.1E-05	1.4E-04	(Total)		22.2		7.2	29.8
Surface Water	Surface Water	Unnamed Tributary	CPAHs	4.1E-007		4.7E-004	4.7E-004						
			(Total)	4.1E-007		4.7E-004	4.7E-004						
Groundwater	Groundwater	Surficial Aquifer	Vinyl Chloride	1.1E-005	6.3E-008	5.9E-006	1.7E-005	1,2-Dichloroethylene	Blood	1.0E-001	--	5.1E-002	1.5E-001
								Cresol M & P	CNS	9.6E-001	--	--	9.6E-01
								Cadmium	Kidney	4.4E-001	--	--	4.4E-001
								Manganese	CNS	3.8E-001	--	--	3.8E-001
			(Total)	1.1E-05	6.3E-008	5.9E-06	1.7E-05	(Total)		1.9		0.051	2.0
Total Risk Across All Media and All Exposure Routes							6E-04	Total Hazard Index Across All Media and All Exposure Routes					20

Total Skin HI =	4
Total Kidney HI =	1
Total CNS HI =	3
Total Blood HI =	6
Total GI Tract HI =	2
Total Unknown HI =	16
Total Body Weight HI =	0.2

Appendix C

Occurrence, Distribution and Selection of Chemicals of Potential Concern
(Tables 2.1 thru 2.10 from BHHRA)

TABLE 2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	Forest Street Site Proper (Area 1)

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
67641	Acetone	46		46		ug/kg	FSSB108	1/13	9 - 20	46	NA	1600	N			NO	BSL
83329	Acenaphthene	45	J	340	J	ug/kg	FSSS12	3/14	340 - 310	340	NA	370000	N			NO	BSL
120127	Anthracene	42	J	240	J	ug/kg	FSSB088	8/14	340 - 410	240	NA	2200000	N			NO	BSL
56553	Benzo(a)anthracene	96	J	720		ug/kg	FSSB088	10/14	340 - 410	720	NA	620	C			YES	CPAH
50328	Benzo(a)pyrene	79	J	680		ug/kg	FSSB088	12/14	340 - 410	680	NA	62	C			YES	ASL
205992	Benzo(b and/or k)fluoranthene	52	J	1800	J	ug/kg	FSSS12	11/11	NA	1,800	NA	620	C			YES	ASL
205992	Benzo(b)fluoranthene	120	J	820		ug/kg	FSSB088	3/3	NA	820	NA	620	C			YES	ASL
	Benzo(ghi)Perylene	48	J	380	J	ug/kg	FSSB088	12/14	350 - 410	380	NA	2,300,000**	C			NO	BSL
205992	Benzo(k)fluoranthene	255	J	720		ug/kg	FSSB088	3/3	NA	720	NA	6,200	C			YES	CPAH
117817	Bis(2-ethyl hexyl)phthalate	110	J	680		ug/kg	FSSB088	3/14	340 - 410	680	NA	35,000	C			NO	BSL
	Carbazole	39	J	350		ug/kg	FSSS08	6/14	340 - 410	350	NA	24,000	C			NO	BSL
218019	Chrysene	52	J	780		ug/kg	FSSB088	13/14	340	780	NA	62,000	C			YES	CPAH
84662	Diethyl Phthalate	430		430		ug/kg	FSSB110	1/14	NA	430	NA	4,900,000	N			NO	BSL
206440	Fluoranthene	74	J	2,900		ug/kg	FSSS02	14/14	NA	2,900	NA	230,000	N			NO	BSL
	Fluorene	40	J	360	J	ug/kg	FSSS05	4/14	340 - 410	360	NA	260,000	N			NO	BSL
103395	Indeno (1,2,3-cd) pyrene	54	J	340	J	ug/kg	FSSB088	11/14	350	340	NA	620	C			YES	CPAH
85018	Phenanthrene	38	J	1,300		ug/kg	FSSS02	13/14	350	1,300	NA	2,000,000**	N			NO	BSL
206440	Pyrene	60	J	1,200		ug/kg	FSSB088/FSSS02	14/14	NA	1,200	NA	230,000	N			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000 residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

(6) The screening value for endrin was used.

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food
- c = Confirmed via gas chromatography/mass spectroscopy

TABLE 2.1 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	Forest Street Site Proper (Area 1)

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
72559	4,4'-DDE	8.9		57	J	ug/kg	FSSB088	4/14	8.1 - 180	57	NA	1,700	C			NO	BSL
50293	4,4'-DDT	95	J	95	J	ug/kg	FSSB088	1/14	8.1 - 180	95	NA	1,700	C			NO	BSL
309002	Aldrin	1.3		2.6		ug/kg	FSSS03	2/14	1.7 - 97	2.6	NA	290	C			NO	BSL
	Alpha-Chlordane	5.2	n	49	n	ug/kg	FSSS02	4/14	1.9 - 97	49	NA	1,600	C			NO	BSL
60571	Dieldrin	25		25		ug/kg	FSSS03	1/14	3.4 - 180	25	NA	30	C			NO	BSL
72208	Endrin Ketone	2.1	J	2.1	J	ug/kg	FSSS03	1/11	3.4 - 180	2.1	NA	1,800 (6)	N			NO	BSL
	Gamma-Chlordane	1.8	J	100	n	ug/kg	FSSS02	4/14	1.9 - 92	100	NA	1,600	C			NO	BSL
76448	Heptachlor	1.3	J	14	nJ	ug/kg	FSSS02	3/14	1.8 - 97	14	NA	110	C			NO	BSL
1024573	Heptachlor Epoxide	7.2	J	21	J	ug/kg	FSSS02	3/14	1.8 - 97	21	NA	53	C			NO	BSL
11096825	PCB-1260 (Aroclor 1260)	8.7	J	1900	c	ug/kg	FSSS11	3/14	34 - 120	1,900	NA	220	C			YES	ASL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000 residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

(6) The screening value for endrin was used.

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- NE = Not Established
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food
- c = Confirmed via gas chromatrography/mass spectroscopy

TABLE 2.1 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	Forest Street Site Proper (Area 1)

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7429905	Aluminum	990		28,000		mg/kg	FSSS11	16/18	NA	28,000	NA	7,600	N			YES	ASL
7440360	Antimony	0.87	J	36.5	J	mg/kg	FSSB110	2/12	0.52 - 20	36 5	NA	3 1	N			YES	ASL
7440382	Arsenic	0.99	J	5.7		mg/kg	FSSB088	15/18	0.43 - 2	5.7	NA	0.39	C			YES	ASL
7440393	Barium	12		530		mg/kg	FSSS11	17/18	29	530	NA	110**	N			YES	ASL
7440417	Beryllium	0.05	J	0.165	J	mg/kg	FSSB110	7/17	0.053 - 1	0.165	NA	15	N			NO	BSL
7440439	Cadmium	0.33	J	9.4		mg/kg	FSSS11	16/18	0.094 - 0.25	9.4	NA	3.7	N			YES	ASL
	Calcium	430	J	51,000		mg/kg	FSSS03	18/18	NA	51,000	NA	NA				NO	NUT
18540299	Chromium, Total	1.7	J	74	J	mg/kg	FSSB110	18/18	NA	74	NA	23	C			YES	ASL
7440484	Cobalt	0.28	J	7.8	J	mg/kg	FSSS11	16/18	0.33 - 1	7.8	NA	470	N			NO	BSL
7440508	Copper	3.1	J	1,800	J	mg/kg	FSSB110	18/18	NA	1,800	NA	110**	N			YES	ASL
57125	Cyanide	1.2		1.2		mg/kg	FSSS11	2/18	0.2 - 0.6	1.2	NA	1.1	N			YES	ASL
7439896	Iron	980		78,000		mg/kg	FSSB110	18/18	NA	78,000	NA	2,300	N			YES	ASL
7439921	Lead	22		3,500		mg/kg	FSSS110	33/35	38 - 48	3,500	NA	400	N			YES	ASL
7439954	Magnesium	60	J	2,200		mg/kg	FSSS11/09	17/18	130	2,200	NA	NA				NO	NUT

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000 residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1.

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

(6) The screening value for endrin was used.

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidance of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food
- c = Confirmed via gas chromatrography/mass spectroscopy

TABLE 2.1 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	Forest Street Site Proper (Area 1)

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7439965	Manganese	10		720		mg/kg	FSSS11	18/18	NA	720	NA	180	N			YES	ASL
7439976	Mercury	0.028	J	0.89		mg/kg	FSSS08	14/18	0.05 - 0.1	0.89	NA	2.3	N			NO	BSL
7440020	Nickel	1.1	J	87.5		mg/kg	FSSB110	17/18	1 - 4.8	87.5	NA	110**	N			NO	BSL
	Potassium	50	J	1,700		mg/kg	FSSS11	16/16	NA	1,700	NA	NA				NO	NUT
7440224	Silver	0.2	J	14	J	mg/kg	FSSS11	10/18	0.18 - 1	14	NA	39	N			NO	BSL
7440235	Sodium	49	J	2,300		mg/kg	FSSS11	8/18	50 - 97	2,300	NA	NA				NO	NUT
7440622	Vanadium	1.7	J	26		mg/kg	FSSS11	18/18	NA	26	NA	15**	N			YES	ASL
7440666	Zinc	14	J	2,100		mg/kg	FSSS11	18/18	NA	2,100	NA	2,300	N			NO	BSL
1746016	2,3,7,8-TCDD (TEQ)	0.6	J	200		ng/kg	FSSS04	21/21	NA	200	NA	3.9	C			YES	ASL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000 residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

(6) The screening value for endrin was used.

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food
- c = Confirmed via gas chromatography/mass spectroscopy

TABLE 2.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	I-10/I-95 Interchange East

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for (4) Contaminant Deletion or Selection
83329	Acenaphthylene	360		360		ug/kg	FSSB316	1/2	350	360	NA	1,100,000**	N			NO	BSL
120127	Anthracene	400		400		ug/kg	FSSB316	1/2	350	400	NA	2,200,000	N	39,000,000	IND	NO	BSL
56553	Benzo(a)anthracene	710		710		ug/kg	FSSB316	1/2	350	710	NA	620	C	2,900	IND	YES	CPAH
50328	Benzo(a)pyrene	780		780		ug/kg	FSSB316	1/2	350	780	NA	62	C	290	IND	YES	ASL
205992	Benzo(b)fluoranthene	930		930		ug/kg	FSSB316	1/2	350	930	NA	620	C	2,900	IND	YES	CPAH
	Benzo(g,h,i)perylene	490		490		ug/kg	FSSB316	1/2	350	490	NA	2,300,000**	C	41,000,000	IND	NO	BSL
205992	Benzo(k)fluoranthene	840		840		ug/kg	FSSB316	1/2	350	840	NA	6,200	C	29,000	IND	YES	CPAH
117817	bis(2-ethylhexyl) Phthalate	140	J	140	J	ug/kg	FSSB051	1/2	340	140	NA	35,000	C	180,000	IND	NO	BSL
218019	Chrysene	770		770		ug/kg	FSSB316	1/2	350	770	NA	62,000	C	290,000	IND	YES	CPAH
206440	Fluoranthene	1,500		1,500		ug/kg	FSSB316	1/2	350	1,500	NA	230,000	N	3,000,000	IND	NO	BSL
86737	Fluorene	79	J	79	J	ug/kg	FSSB316	1/2	350	79	NA	260,000	N	3,300,000	IND	NO	BSL
193395	Indeno(1,2,3-c,d)pyrene	470		470		ug/kg	FSSB316	1/2	350	470	NA	620	C	2,900	IND	YES	CPAH
85018	Phenanthrene	850		850		ug/kg	FSSB316	1/2	350	850	NA	2,000,000**	N	30,000,000	IND	NO	BSL
129000	Pyrene	1,100		1,100		ug/kg	FSSB316	1/2	350	1,100	NA	230,000	N	5,400,000	IND	NO	BSL
11096825	PCB-1260 (AROCHLOR 1260	32	J	88		ug/kg	FSSB051	2/2	NA	88	NA	220	C	1,000	IND	NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food
- IND=Region 9 PRG Industrial values equal to a carcinogenic risk of 1E-06 or a hazard quotient of 0.1

TABLE 2.2 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	I-10/1-95 Interchange East

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
7429905	Aluminum	1,450		1,900		mg/kg	FSSB318	13/13	NA	1,900	NA	7,600	N	100,000	IND	NO	BSL
7440360	Antimony	0.87	J	1.4	J	mg/kg	FSSB325	2/13	0.45 - 0.56	1.4	NA	3.1	N	82	IND	NO	BSL
7440382	Arsenic	0.71	J	3.1		mg/kg	FSSB325	6/13	0.46 - 1.15	3.1	NA	0.39	C	2.7	IND	YES	ASL
7440393	Barium	5.5	J	420		mg/kg	FSSB325	13/13	NA	420	NA	110**	N	87,000	IND	NO	BSL
7440417	Beryllium	0.061	J	0.096	J	mg/kg	FSSB325	9/13	0.058 - 0.059	0.096	NA	15	N	2,200	IND	NO	BSL
7440439	Cadmium	0.13	J	3		mg/kg	FSSB047	12/13	0.09	3	NA	3.7	N	81	IND	NO	BSL
	Calcium	1,000	J	38,000		mg/kg	FSSB316	13/13	NA	38,000	NA	NA		NA	IND	NO	NUT
18540299	Chromium, Total	1.6	J	19		mg/kg	FSSB325	13/13	NA	19	NA	23	C	450	IND	NO	BSL
7440484	Cobalt	0.27	J	1.7	J	mg/kg	FSSB325	11/13	0.2	1.7	NA	470	N	100,000	IND	NO	BSL
7440508	Copper	9.3		45		mg/kg	FSSB316	7/13	1.1 - 31	45	NA	110**	N	76,000	IND	NO	BSL
57125	Cyanide	0.53	J	0.78	J	mg/kg	FSSB325	7/13	0.51 - 0.57	0.78	NA	1.1	N	3.5	IND	NO	BSL
7439896	Iron	480	J	6,100	J	mg/kg	FSSB047	13/13	NA	6,100	NA	2,300	N	100,000	IND	NO	BSL
7439921	Lead	51	J	1,013		mg/kg	FSSB052	27/27	NA	1,013	NA	400	N	750	IND	YES	ASL
7439954	Magnesium	88	J	610	J	mg/kg	FSSB316	13/13	NA	610	NA	NA		NA	IND	NO	NUT
7439965	Manganese	6.9	J	160	J	mg/kg	FSSB325	13/13	NA	160	NA	180	N	3,200	IND	NO	BSL
7439976	Mercury	0.035	J	1.7		mg/kg	FSSB047	11/13	0.015 - 0.09	1.7	NA	2.3	N	61	IND	NO	BSL
7440020	Nickel	1.4	J	4.3	J	mg/kg	FSSB047	7/13	0.82 - 6.9	4.3	NA	110**	N	28,000	IND	NO	BSL
	Potassium	39	J	115	J	mg/kg	FSSB318	13/13	NA	115	NA	NA		NA	IND	NO	NUT
7440224	Silver	0.175	J	0.35	J	mg/kg	FSSB316	5/13	0.18 - 0.2	0.35	NA	39	N	1,000	IND	NO	BSL
7440622	Vanadium	2.3	J	9	J	mg/kg	FSSB318	13/13	NA	9	NA	15**	N	7,400	IND	NO	BSL
7440666	Zinc	20.0	J	980	J	mg/kg	FSSB325	13/13	NA	980	NA	2,300	N	100,000	IND	NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food
- IND=Region 9 PRG Industrial values equal to a carcinogenic risk of 1E-06 or a hazard quotient of 0.1

TABLE 2.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	I-10/I-95 Interchange West

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for (4) Contaminant Deletion or Selection
7429905	Aluminum	1,300		3,000		mg/kg	FSSB060	5/5	NA	3,000	NA	7,600	N	100,000	IND	NO	BSL
7440360	Antimony	2.2	J	5.3	J	mg/kg	FSSB058	3/5	0.43 - 0.53	5.3	NA	3.1	N	82	IND	NO	BSL
7440382	Arsenic	3.6		9.3		mg/kg	FSSB058	4/5	0.48	9.3	NA	0.39	C	2.7	IND	YES	ASL
7440393	Barium	6.6	J	410		mg/kg	FSSB058	5/5	NA	410	NA	110**	N	87,000	IND	NO	BSL
7440417	Beryllium	0.056	J	0.37	J	mg/kg	FSSB058	4/5	0.061	0.37	NA	15	N	2,200	IND	NO	BSL
7440439	Cadmium	0.93		16		mg/kg	FSSB058	4/5	0.093	16	NA	3.7	N	81	IND	NO	BSL
	Calcium	2,200		63,000		mg/kg	FSSB058	5/5	NA	63,000	NA	NA		NA	IND	NO	NUT
18540299	Chromium, Total	3.6		86		mg/kg	FSSB058	5/5	NA	86	NA	23	C	450	IND	NO	BSL
7440484	Cobalt	0.26	J	7.3	J	mg/kg	FSSB058	4/5	0.2	7.3	NA	470	N	100,000	IND	NO	BSL
7440508	Copper	9.4		170		mg/kg	FSSB061	5/5	NA	170	NA	110**	N	76,000	IND	NO	BSL
57125	Cyanide	16		16		mg/kg	FSSB058	1/5	0.52 - 0.56	16	NA	1.1		3.5	IND	YES	ASL
7439896	Iron	410		28,000		mg/kg	FSSB061	5/5	NA	28,000	NA	2,300	N	100,000	IND	NO	BSL
7439921	Lead	13		1,010		mg/kg	FSSB057	13/15	15 - 58	1,010	NA	400	N	750	IND	YES	ASL
7439954	Magnesium	75	J	730	J	mg/kg	FSSB058	5/5	NA	730	NA	NA		NA	IND	NO	NUT

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason: *Infrequent Detection but Associated Historically (HIST)*
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason: Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: N/A = Not Applicable
ND = Not Detected
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
J = Estimated Value
n = Presumptive evidence of material
C = Carcinogenic
N = Non-Carcinogenic
W = Water
NF = Nonfood
F = Food
IND=Region 9 PRG Industrial values equal to a carcinogenic risk of 1E-06 or a hazard quotient of 0.1

TABLE 2.3 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	I-10/I-95 Interchange West

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for (4) Contaminant Deletion or Selection
7439965	Manganese	6.1		280		mg/kg	FSSB061	5/5	NA	280	NA	180	N	3,200	IND	NO	BSL
7439976	Mercury	0.057	J	0.77	J	mg/kg	FSSB060	5/5	NA	0.77	NA	2.3	N	61	IND	NO	BSL
7440020	Nickel	0.81	J	28		mg/kg	FSSB061	5/5	NA	28	NA	110**	N	28,000	IND	NO	BSL
	Potassium	36	J	210	J	mg/kg	FSSB058	5/5	NA	210	NA	NA		NA	IND	NO	NUT
7782492	Selenium	2		2		mg/kg	FSSB058	1/5	0.37 - 0.46	2	NA	39	N	1,000	IND	NO	BSL
7440224	Silver	0.3	J	88		mg/kg	FSSB061	4/5	0.2	88	NA	39	N	1,000	IND	NO	BSL
7440235	Sodium	44	J	560	J	mg/kg	FSSB058	4/5	52	560	NA	NA		NA	IND	NO	NUT
7440622	Vanadium	1.5	J	14		mg/kg	FSSB058	5/5	NA	14	NA	15**	N	7,400	IND	NO	BSL
7440666	Zinc	15		1,100	J	mg/kg	FSSB058	5/5	NA	1100	NA	2,300	N	100,000	IND	NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason: Infrequent Detection but Associated Historically (HIST)
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason: Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: N/A = Not Applicable
ND = Not Detected
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
J = Estimated Value
n = Presumptive evidence of material
C = Carcinogenic
N = Non-Carcinogenic
W = Water
NF = Nonfood
F = Food
IND=Region 9 PRG industrial values equal to a carcinogenic risk of 1E-06 or a hazard quotient of 0.1

TABLE 2.4
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	Area North of McCoy's Creek

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for (4) Contaminant Deletion or Selection
129000	Pyrene	110	J	110	J	ug/kg	FSSB018	1/1	NA	110	NA	230,000	N	5,400,000	IND	NO	BSL
7429905	Aluminum	190		2,800		mg/kg	FSSB391	7/7	NA	2,800	NA	7,600	N	100,000	IND	NO	BSL
7440360	Antimony	0.92	J	1.2	J	mg/kg	FSSB391	2/7	0.47 - 0.69	1.2	NA	3.1	N	82	IND	NO	BSL
7440382	Arsenic	0.52	J	3.2	J	mg/kg	FSSB018	6/7	0.45	3.2	NA	0.39	C	2.7	IND	YES	ASL
7440393	Barium	4	J	140		mg/kg	FSSB391	7/7	NA	140	NA	110**	N	87,000	IND	NO	BSL
7440417	Beryllium	0.09	J	0.16	J	mg/kg	FSSB392	5/7	0.053 - 0.059	0.16	NA	15	N	2,200	IND	NO	BSL
7440439	Cadmium	0.24	J	0.97	J	mg/kg	FSSB391	6/7	0.09	0.97	NA	3.7	N	81	IND	NO	BSL
	Calcium	650	J	400,000		mg/kg	FSSB363	7/7	NA	400,000	NA	NA		NA	IND	NO	NUT
18540299	Chromium, Total	2.4		22		mg/kg	FSSB391	7/7	NA	22	NA	23	C	450	IND	NO	BSL
7440484	Cobalt	0.2	J	1	J	mg/kg	FSSB391	6/7	0.19	1	NA	470	N	100,000	IND	NO	BSL
7440508	Copper	2.3	J	89		mg/kg	FSSB391	6/7	1.2	89	NA	110**	N	76,000	IND	NO	BSL
57125	Cyanide	0.58	J	2.2		mg/kg	FSSB018	2/7	0.54 - 0.57	2.2	NA	1.1	N	3.5	IND	NO	BSL
7439896	Iron	290	J	5,800		mg/kg	FSSB391	7/7	NA	5,800	NA	2,300	N	100,000	IND	NO	BSL
7439921	Lead	8.3		225	J	mg/kg	FSSB391	11/14	0.69 - 45	225	NA	400	N	750	IND	NO	BSL
7439954	Magnesium	94	J	2,900		mg/kg	FSSB363	7/7	NA	2,900	NA	NA		NA	IND	NO	NUT

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason Infrequent Detection but Associated Historically (HIST)
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason: Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: N/A = Not Applicable
ND = Not Detected
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
J = Estimated Value
n = Presumptive evidence of material
C = Carcinogenic
N = Non-Carcinogenic
W = Water
NF = Nonfood
F = Food
IND=Region 9 PRG industrial values equal to a carcinogenic risk of 1E-06 or a hazard quotient of 0.1

TABLE 2.4 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Surface Soil
Exposure Medium:	*Surface Soil*
Exposure Point:	Area North of McCoy's Creek

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for (4) Contaminant Deletion or Selection
7439965	Manganese	5.85		190		mg/kg	FSSB391	7/7	NA	190	NA	180	N	3,200	IND	NO	BSL
7439976	Mercury	0.0091	J	0.12	J	mg/kg	FSSB018	4/7	0.0028 - 0.056	0.12	NA	2.3	N	61	IND	NO	BSL
7440020	Nickel	0.79	J	4.4	J	mg/kg	FSSB391	7/7	NA	4.4	NA	110**	N	4,100	IND	NO	BSL
	Potassium	46	J	150	J	mg/kg	FSSB392	7/7	NA	150	NA	NA		NA	IND	NO	NUT
7440224	Silver	0.41	J	0.5	J	mg/kg	FSSB392	2/7	0.19 - 0.26	0.5	NA	39	N	1,000	IND	NO	BSL
	Sodium	54	J	185.5	J	mg/kg	FSSB018	5/7	50.5 - 190	185.5	NA	NA		NA	IND	NO	NUT
7440622	Vanadium	3.85	J	11.5		mg/kg	FSSB018	7/7	NA	11.5	NA	15**	N	1,400	IND	NO	BSL
7440666	Zinc	16.0		600	J	mg/kg	FSSB391	6/7	2.9	600	NA	1,100	N	100,000	IND	NO	BSL

**The *Florida Soil Cleanup Target Level (SCTL)* was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason Infrequent Detection but Associated Historically (HIST)
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason: Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: N/A = Not Applicable
ND = Not Detected
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
J = Estimated Value
n = Presumptive evidence of material
C = Carcinogenic
N = Non-Carcinogenic
W = Water
NF = Nonfood
F = Food
IND=Region 9 PRG Industrial values equal to a carcinogenic risk of 1E-06 or a hazard quotient of 0.1

TABLE 2.4a
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	Area North of McCoy's Creek

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for (4) Contaminant Deletion or Selection
129000	Pyrene	110	J	110	J	ug/kg	FSSB018	1/1	NA	110	NA	230,000	N	5,400,000	RES	NO	BSL
7429905	Aluminum	190		2,800		mg/kg	FSSB391	7/7	NA	2,800	NA	7,600	N	100,000	RES	NO	BSL
7440360	Antimony	0.92	J	1.2	J	mg/kg	FSSB391	2/7	0.47 - 0.69	1.2	NA	3.1	N	82	RES	NO	BSL
7440382	Arsenic	0.52	J	3.2	J	mg/kg	FSSB018	6/7	0.45	3.2	NA	0.39	C	2.7	RES	YES	ASL
7440393	Barium	4	J	140		mg/kg	FSSB391	7/7	NA	140	NA	110**	N	87,000	RES	YES	ASL
7440417	Beryllium	0.09	J	0.16	J	mg/kg	FSSB392	5/7	0.053 - 0.059	0.16	NA	15	N	2,200	RES	NO	BSL
7440439	Cadmium	0.24	J	0.97	J	mg/kg	FSSB391	6/7	0.09	0.97	NA	3.7	N	81	RES	NO	BSL
	Calcium	650	J	400,000		mg/kg	FSSB363	7/7	NA	400,000	NA	NA		NA	RES	NO	NUT
18540299	Chromium, Total	2.4		22		mg/kg	FSSB391	7/7	NA	22	NA	23	C	450	RES	NO	BSL
7440484	Cobalt	0.2	J	1	J	mg/kg	FSSB391	6/7	0.19	1	NA	470	N	100,000	RES	NO	BSL
7440508	Copper	2.3	J	89		mg/kg	FSSB391	6/7	1.2	89	NA	110**	N	76,000	RES	NO	BSL
57125	Cyanide	0.58	J	2.2		mg/kg	FSSB018	2/7	0.54 - 0.57	2.2	NA	1.1	N	3.5	RES	YES	ASL
7439896	Iron	290	J	5,800		mg/kg	FSSB391	7/7	NA	5,800	NA	2,300	N	100,000	RES	YES	ASL
7439921	Lead	8.3		225	J	mg/kg	FSSB391	11/14	0.69 - 45	225	NA	400	N	750	RES	NO	BSL
7439954	Magnesium	94	J	2,900		mg/kg	FSSB363	7/7	NA	2,900	NA	NA		NA	RES	NO	NUT

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason: Infrequent Detection but Associated Historically (HIST)
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason: Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: N/A = Not Applicable
ND = Not Detected
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
J = Estimated Value
n = Presumptive evidence of material
C = Carcinogenic
N = Non-Carcinogenic
W = Water
NF = Nonfood
F = Food
RES=Region 9 PRG residential values equal to a carcinogenic risk of 1E-06 or a hazard quotient of 0.1

TABLE 2.4a (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	Area North of McCoy's Creek

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for (4) Contaminant Deletion or Selection
7439965	Manganese	5.85		190		mg/kg	FSSB391	7/7	NA	190	NA	180	N	3,200	RES	YES	ASL
7439976	Mercury	0.0091	J	0.12	J	mg/kg	FSSB018	4/7	0.0028 - 0.056	0.12	NA	2.3	N	61	RES	NO	BSL
7440020	Nickel	0.79	J	4.4	J	mg/kg	FSSB391	7/7	NA	4.4	NA	110**	N	28,000	RES	NO	BSL
	Potassium	46	J	150	J	mg/kg	FSSB392	7/7	NA	150	NA	NA		NA	RES	NO	NUT
7440224	Silver	0.41	J	0.5	J	mg/kg	FSSB392	2/7	0.19 - 0.26	0.5	NA	39	N	1,000	RES	NO	BSL
	Sodium	54	J	185.5	J	mg/kg	FSSB018	5/7	50.5 - 190	185.5	NA	NA		NA	RES	NO	NUT
7440622	Vanadium	3.85	J	11.5		mg/kg	FSSB018	7/7	NA	11.5	NA	15**	N	7,400	RES	NO	BSL
7440666	Zinc	16.0		600	J	mg/kg	FSSB391	6/7	2.9	600	NA	1,100	N	100,000	RES	NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1.

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason Infrequent Detection but Associated Historically (HIST)
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason: Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: N/A = Not Applicable
ND = Not Detected
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
J = Estimated Value
n = Presumptive evidence of material
C = Carcinogenic
N = Non-Carcinogenic
W = Water
NF = Nonfood
F = Food
RES=Region 9 PRG residential values equal to a carcinogenic risk of 1E-06 or a hazard quotient of 0.1

TABLE 2.5
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	Forest Street Site Proper (Area 1)

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
56553	Benzo(a)anthracene	67	J	340	J	ug/kg	FSSB009	4/6	NA	340	NA	620	C			YES	CPAH
50328	Benzo(a)pyrene	86	J	380	J	ug/kg	FSSB009	3/6	460	380	NA	62	C			YES	ASL
205992	Benzo(b and/or k)fluoranthene	190	J	680	J	ug/kg	FSSB009	3/6	460	680	NA	620	C			YES	ASL
	Benzo(g,h,i)perylene	100	J	210	J	ug/kg	FSSB009	3/6	460	210	NA	2,300,000**	N			NO	BSL
86748	Carbazole	55	J	55	J	ug/kg	FSSB006	1/6	380 - 530	55	NA	24,000	C			NO	BSL
218019	Chrysene	71	J	340	J	ug/kg	FSSB009	4/6	NA	340	NA	62,000	C			YES	CPAH
	Dibenzo(a,h)anthracene	40	J	40	J	ug/kg	FSSB008	1/6	400 - 530	40	NA	62	C			YES	CPAH
206440	Fluoranthene	120	J	670		ug/kg	FSSB009	4/6	NA	670	NA	230,000	N			NO	BSL
86737	Fluorene	65	J	65	J	ug/kg	FSSB006	1/6	380 - 530	65	NA	260,000	N			NO	BSL
193395	Indeno(1,2,3-c,d)pyrene	66	J	190	J	ug/kg	FSSB009	3/6	460	190	NA	620	C			YES	CPAH
85018	Phenanthrene	200	J	490	J	ug/kg	FSSB006	3/6	530	490	NA	2,000,000**	N			NO	BSL
129000	Pyrene	82	J	480		ug/kg	FSSB009	4/6	NA	480	NA	230,000	N			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food

TABLE 2.5 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	Forest Street Site Proper (Area 1)

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
	Alpha-Chlordane /2	6.6		7		ug/kg	FSSB008	1/6	2.1 - 2.7	7	NA	1,600	C			NO	BSL
60571	Dieldrin	4		4		ug/kg	FSSB008	1/6	4.0 - 5.3	4	NA	30	C			NO	BSL
72208	Endrin	1.3	JN	1	JN	ug/kg	FSSB006	1/6	3.9 - 5.3	1.3	NA	1,800	N			NO	BSL
	Gamma-Chlordane /2	2.9		15		ug/kg	FSSB008	2/6	2.1 - 2.4	15	NA	1,600	C			NO	BSL
7429905	Aluminum	490		8,700		mg/kg	FSSB110	13/13	NA	8,700	NA	7,600	N			YES	ASL
7440360	Antimony	1.07	J	77	J	mg/kg	FSSB110	5/13	0.47 - 9	77	NA	3.1	N			YES	ASL
7440382	Arsenic	1.3	J	310	J	mg/kg	FSSB007	8/11	0.51 - 1.9	310	NA	0.39	C			YES	ASL
7440393	Barium	4.1	J	1,500	J	mg/kg	FSSB110	13/13	1	1,500	NA	110**	N			YES	ASL
7440417	Beryllium	0.07	J	9.4		mg/kg	FSSB007	9/13	0.064 - 1	9.4	NA	15	N			NO	BSL
7440439	Cadmium	0.082	J	13,000		mg/kg	FSSB007	10/13	0.089 - 0.1	13,000	NA	3.7	N			YES	ASL
	Calcium	38	J	39,000		mg/kg	FSSB095	13/13	NA	39,000	NA	NA				NO	NUT
18540299	Chromium, Total	4	J	70	J	mg/kg	FSSB110	11/13	0.93 - 3	70	NA	23	C			YES	ASL
7440484	Cobalt	0.23	J	530	J	mg/kg	FSSB007	11/13	0.21 - 0.23	530	NA	470	N			YES	ASL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
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- F = Food

TABLE 2.5 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	Forest Street Site Proper (Area 1)

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
7440508	Copper	5.4		71,000		mg/kg	FSSB007	9/13	0.81 - 73	71,000	NA	110**	N			YES	ASL
57125	Cyanide	0.33		1.25		mg/kg	FSSB095	5/13	0.51 - 0.62	1.25	NA	1.1	N			YES	ASL
7439896	Iron	230	J	150,000		mg/kg	FSSB110	13/13	NA	150,000	NA	2,300	N			YES	ASL
7439921	Lead	21.6		5,310	J	mg/kg	FSSB110	20/26	41 - 48	5,310	NA	400	N			YES	ASL
7439954	Magnesium	24	J	3,000		mg/kg	FSSB095	12/13	34	3,000	NA	NA				NO	NUT
7439965	Manganese	6.7	J	1,800		mg/kg	FSSB110	12/13	NA	1,800	NA	180	N			YES	ASL
7439976	Mercury	0.0059	J	13		mg/kg	FSSB007	12/13	0.0089	13	NA	2.3	N			YES	ASL
7440020	Nickel	0.53	J	200	J	mg/kg	FSSB007	12/13	0.48	200	NA	110**	N			YES	ASL
7440097	Potassium	1.7		1,200	J	mg/kg	FSSB110	13/13	NA	1,200	NA	NA				NO	NUT
7782492	Selenium	0.52	J	2	J	mg/kg	FSSB007	3/13	0.4 - 1	2	NA	39	N			NO	BSL
7440224	Silver	0.21	J	180		mg/kg	FSSB007	6/13	0.18 - 3	180	NA	39	N			YES	ASL
7440235	Sodium	190		1,200		mg/kg	FSSB110	5/13	0.68 - 160	1,200	NA	NA				NO	NUT
	Thallium	6.9	J	7	J	mg/kg	FSSB007	1/13	0.53 - 2	7	NA	0.55	N			YES	ASL
7440622	Vanadium	1	J	2,000		mg/kg	FSSB007	13/13	NA	2,000	NA	15**	N			YES	ASL
7440666	Zinc	1.4	J	3,800		mg/kg	FSSB110	12/13	3.8	3,800	NA	2,300	N			YES	ASL
1746016	2,3,7,8-TCDD (TEQ)	7.8	J	81		ng/kg	FSSB110	3/3	NA	81	NA	3.9	C			YES	ASL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- F = Food

TABLE 2.6
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	I-10/I-95 Interchange East

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for (4) Contaminant Deletion or Selection
7429905	Aluminum	1,900		1,900		mg/kg	FSSB331	1/1	NA	1,900	NA	7,600	N	100,000	IND	NO	BSL
7440382	Arsenic	6.8		6.8		mg/kg	FSSB331	1/1	NA	6.8	NA	0.39	C	2.7	IND	YES	ASL
7440393	Barium	610		610		mg/kg	FSSB331	1/1	NA	610	NA	110**	N	87,000	IND	NO	BSL
7440417	Beryllium	0.06	J	0.06	J	mg/kg	FSSB331	1/1	NA	0.06	NA	15	N	22,000	IND	NO	BSL
7440439	Cadmium	1.4		1.4		mg/kg	FSSB331	1/1	NA	1.4	NA	3.7	N	81	IND	NO	BSL
	Calcium	3,300		3,300		mg/kg	FSSB331	1/1	NA	3,300	NA	NA		NA	IND	NO	NUT
18540299	Chromium, Total	7.2		7.2		mg/kg	FSSB331	1/1	NA	7.2	NA	23	C	450	IND	NO	BSL
7440484	Cobalt	0.72	J	0.72	J	mg/kg	FSSB331	1/1	NA	0.72	NA	470	N	100,000	IND	NO	BSL
7440508	Copper	20		20		mg/kg	FSSB331	1/1	NA	20	NA	110**	N	76,000	IND	NO	BSL
57125	Cyanide	0.98	J	0.98	J	mg/kg	FSSB331	1/1	NA	0.98	NA	1.1		3.5	IND	NO	BSL
7439896	Iron	3,200		3,200		mg/kg	FSSB331	1/1	NA	3,200	NA	2,300	N	100,000	IND	NO	BSL
7439921	Lead	16.3		1,030		mg/kg	FSSB045	9/28	8.8 - 41	1,030	NA	400	N	750	IND	YES	ASL
7439954	Magnesium	190	J	190	J	mg/kg	FSSB331	1/1	NA	190	NA	NA		NA	IND	NO	NUT

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason: Infrequent Detection but Associated Historically (HIST)
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason: Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: N/A = Not Applicable
ND = Not Detected
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
J = Estimated Value
n = Presumptive evidence of material
C = Carcinogenic
N = Non-Carcinogenic
W = Water
NF = Nonfood
F = Food
IND=Region 9 PRG Industrial values equal to a carcinogenic risk of 1E-06 or a hazard quotient of 0.1

TABLE 2.6 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	I-10/I-95 Interchange East

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for (4) Contaminant Deletion or Selection
7439965	Manganese	61		61		mg/kg	FSSB331	1/1	NA	61	NA	180	N	3,200	IND	NO	BSL
7439976	Mercury	0.6	J	0.6	J	mg/kg	FSSB331	1/1	NA	0.6	NA	2.3	N	61	IND	NO	BSL
7440020	Nickel	3.8	J	3.8	J	mg/kg	FSSB331	1/1	NA	3.8	NA	110**	N	28,000	IND	NO	BSL
	Potassium	73	J	73	J	mg/kg	FSSB331	1/1	NA	73	NA	NA		NA	IND	NO	NUT
7440622	Vanadium	4.6	J	4.6	J	mg/kg	FSSB331	1/1	NA	4.6	NA	15**	N	7,400	IND	NO	BSL
7440666	Zinc	600	J	600	J	mg/kg	FSSB331	1/1	NA	600	NA	2,300	N	100,000	IND	NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.
(2) Background concentrations are not being used for this evaluation.
(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1
(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.
(5) Rationale Codes Selection Reason: Infrequent Detection but Associated Historically (HIST)
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason: Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: N/A = Not Applicable
ND = Not Detected
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
J = Estimated Value
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C = Carcinogenic
N = Non-Carcinogenic
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F = Food
IND=Region 9 PRG Industrial values equal to a carcinogenic risk of 1E-06 or a hazard quotient of 0.1

TABLE 2.7
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	I-10/I-95 Interchange West

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
7429905	Aluminum	560		7,800		mg/kg	FSSB057	5/5	NA	7,800	NA	7,600	N	100,000	IND	NO	BSL
7440360	Antimony	2.1	J	8.8	J	mg/kg	FSSB061	2/5	0.56- 0.98	8.8	NA	3.1	N	82	IND	NO	BSL
7440382	Arsenic	6		13		mg/kg	FSSB057	3/5	0.51 - 0.57	13	NA	0.39	C	2.7	IND	YES	ASL
7440393	Barium	3.8	J	420		mg/kg	FSSB061	5/5	NA	420	NA	110**	N	87,000	IND	NO	BSL
7440417	Beryllium	0.12	J	0.43	J	mg/kg	FSSB057	3/5	0.064 - 0.072	0.43	NA	15	N	2,200	IND	NO	BSL
7440439	Cadmium	1.1	J	8.6		mg/kg	FSSB057	3/5	0.098 - 0.11	8.60	NA	3.7	N	81	IND	NO	BSL
	Calcium	180	J	28,000		mg/kg	FSSB057	5/5	NA	28,000	NA	NA		NA	IND	NO	NUT
18540299	Chromium, Total	0.85	J	83		mg/kg	FSSB057	5/5	NA	83	NA	23	C	450	IND	NO	BSL
7440484	Cobalt	0.33	J	86		mg/kg	FSSB057	4/5	0.24	86	NA	470	N	100,000	IND	NO	BSL
7440508	Copper	190		2,300		mg/kg	FSSB057	3/5	0.81 - 0.91	2,300	NA	110**	N	76,000	IND	NO	BSL
7439896	Iron	140		180,000		mg/kg	FSSB057	5/5	NA	180,000	NA	2,300	N	100,000	IND	YES	ASL
7439921	Lead	1.1		1,480		mg/kg	FSSB061	23/41	15 - 43	1,010	NA	400	N	750	IND	YES	ASL
7439954	Magnesium	24	J	9,100		mg/kg	FSSB057	3/3	NA	9,100	NA	NA		NA	IND	NO	NUT

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason: Infrequent Detection but Associated Historically (HIST)
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason: Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: N/A = Not Applicable
ND = Not Detected
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
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W = Water
NF = Nonfood
F = Food
IND=Region 9 PRG industrial values equal to a carcinogenic risk of 1E-06 or a hazard quotient of 0.1

TABLE 2.7 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	I-10/I-95 Interchange West

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
7439965	Manganese	3.9		1,500		mg/kg	FSSB057	5/5	NA	1,500	NA	180	N	3,200	IND	NO	BSL
7439976	Mercury	0.63	J	1.7	J	mg/kg	FSSB060	3/5	0.01 - 0.016	1.7	NA	2.3	N	61	IND	NO	BSL
7440020	Nickel	0.5	J	38		mg/kg	FSSB057	4/5	0.54	38	NA	110**	N	28,000	IND	NO	BSL
	Potassium	26	J	1,500		mg/kg	FSSB057	5/5	NA	1,500	NA	NA		NA	IND	NO	NUT
7440224	Silver	0.33	J	5.6		mg/kg	FSSB061	3/5	0.21 - 0.24	5.6	NA	39	N	1,000	IND	NO	BSL
7440235	Sodium	55	J	1,100		mg/kg	FSSB057	4/5	62	1,100	NA	NA		NA	IND	NO	NUT
7440622	Vanadium	0.38	J	120		mg/kg	FSSB057	5/5	NA	120	NA	15**	N	7,400	IND	NO	BSL
7440666	Zinc	9.4	J	9,800	J	mg/kg	FSSB057	4/5	1.1	9,800	NA	2,300	N	100,000	IND	NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason: Infrequent Detection but Associated Historically (HIST)
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason: Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: N/A = Not Applicable
ND = Not Detected
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
J = Estimated Value
n = Presumptive evidence of material
C = Carcinogenic
N = Non-Carcinogenic
W = Water
NF = Nonfood
F = Food
IND=Region 9 PRG industrial values equal to a carcinogenic risk of 1E-06 or a hazard quotient of 0.1

TABLE 2.8
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	Area North of McCoy's Creek

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for (4) Contaminant Deletion or Selection
7429905	Aluminum	2,900		3,600		mg/kg	FSSB354	2/2	NA	3,600	NA	7,600	N	100,000	IND	NO	BSL
7440382	Arsenic	1.2	J	3.1		mg/kg	FSSB364	2/2	NA	3.1	NA	0.39	C	2.7	IND	YES	ASL
7440393	Barium	15	J	160	J	mg/kg	FSSB364	2/2	NA	160	NA	110**	N	87,000	IND	NO	BSL
7440417	Beryllium	0.19	J	0.62	J	mg/kg	FSSB364	2/2	NA	0.62	NA	15	N	2,200	IND	NO	BSL
7440439	Cadmium	0.1	J	0.13	J	mg/kg	FSSB006	2/2	NA	0.13	NA	3.7	N	81	IND	NO	BSL
	Calcium	12,000		91,000		mg/kg	FSSB006	2/2	NA	91,000	NA	NA		NA	IND	NO	NUT
16540299	Chromium, Total	5	J	8.5	J	mg/kg	FSSB364	2/2	NA	8.50	NA	23	C	450	IND	NO	BSL
7440484	Cobalt	1.4	J	1.8	J	mg/kg	FSSB364	2/2	NA	1.8	NA	470	N	100,000	IND	NO	BSL
7440508	Copper	18		18		mg/kg	FSSB006	1/2	22	18	NA	110**	N	76,000	IND	NO	BSL
7439896	Iron	3,800	J	5,900	J	mg/kg	FSSB364	2/2	NA	5,900	NA	2,300	N	100,000	IND	NO	BSL
7439921	Lead	10		152		mg/kg	FSSB020	9/13	NA	152	NA	400	N	750	IND	NO	BSL
7439954	Magnesium	420	J	540	J	mg/kg	FSSB364	2/2	NA	540	NA	NA		NA	IND	NO	NUT

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food
- IND=Region 9 PRG industrial values equal to a carcinogenic risk of 1E-06 or a hazard quotient of 0.1

TABLE 2.8 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	Area North of McCoy's Creek

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7439965	Manganese	76	J	130	J	mg/kg	FSSB364	2/2	NA	130	NA	180	N	3,200	IND	NO	BSL
7439976	Mercury	0.023	J	0.028	J	mg/kg	FSSB364	2/2	NA	0.028	NA	2.3	N	61	IND	NO	BSL
7440020	Nickel	3	J	4.3	J	mg/kg	FSSB364	2/2	NA	4.3	NA	110**	N	28,000	IND	NO	BSL
	Potassium	140	J	400	J	mg/kg	FSSB364	2/2	NA	400	NA	NA		NA	IND	NO	NUT
7440622	Vanadium	5	J	7.3	J	mg/kg	FSSB364	2/2	NA	7.3	NA	15**	N	7,400	IND	NO	BSL
7440666	Zinc	60.0		60		mg/kg	FSSB006	1/2	39	60	NA	1,100	N	100,000	IND	NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food
- IND=Region 9 PRG industrial values equal to a carcinogenic risk of 1E-06 or a hazard quotient of 0.1

TABLE 2.8a
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	Area North of McCoy's Creek

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for (4) Contaminant Deletion or Selection
7429905	Aluminum	2,900		3,600		mg/kg	FSSB364	2/2	NA	3,600	NA	7,600	N	100,000	RES	NO	BSL
7440382	Arsenic	1.2	J	3.1		mg/kg	FSSB364	2/2	NA	3.1	NA	0.39	C	2.7	RES	YES	ASL
7440393	Barium	15	J	160	J	mg/kg	FSSB364	2/2	NA	160	NA	110**	N	87,000	RES	YES	ASL
7440417	Beryllium	0.19	J	0.62	J	mg/kg	FSSB364	2/2	NA	0.62	NA	15	N	2,200	RES	NO	BSL
7440439	Cadmium	0.1	J	0.13	J	mg/kg	FSSB006	2/2	NA	0.13	NA	3.7	N	81	RES	NO	BSL
	Calcium	12,000		91,000		mg/kg	FSSB006	2/2	NA	91,000	NA	NA		NA	RES	NO	NUT
18540299	Chromium, Total	5	J	8.5	J	mg/kg	FSSB364	2/2	NA	8.50	NA	23	C	450	RES	NO	BSL
7440484	Cobalt	1.4	J	1.8	J	mg/kg	FSSB364	2/2	NA	1.8	NA	470	N	100,000	RES	NO	BSL
7440508	Copper	18		18		mg/kg	FSSB006	1/2	22	18	NA	110**	N	76,000	RES	NO	BSL
7439896	Iron	3,800	J	5,900	J	mg/kg	FSSB364	2/2	NA	5,900	NA	2,300	N	100,000	RES	YES	ASL
7439921	Lead	10		152		mg/kg	FSSB020	9/13	NA	152	NA	400	N	750	RES	NO	BSL
7439954	Magnesium	420	J	540	J	mg/kg	FSSB364	2/2	NA	540	NA	NA		NA	RES	NO	NUT

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason: Infrequent Detection but Associated Historically (HIST)
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason: Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: N/A = Not Applicable
ND = Not Detected
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
J = Estimated Value
n = Presumptive evidence of material
C = Carcinogenic
N = Non-Carcinogenic
W = Water
NF = Nonfood
F = Food
RES=Region 9 PRG residential values equal to a carcinogenic risk of 1E-06 or a hazard quotient of 0.1

TABLE 2.8a (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	Area North of McCoy's Creek

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for (4) Contaminant Deletion or Selection
7439965	Manganese	76	J	130	J	mg/kg	FSSB364	2/2	NA	130	NA	180	N	3,200	RES	NO	BSL
7439976	Mercury	0.023	J	0.028	J	mg/kg	FSSB364	2/2	NA	0.028	NA	2.3	N	61	RES	NO	BSL
7440020	Nickel	3	J	4.3	J	mg/kg	FSSB364	2/2	NA	4.3	NA	110**	N	28,000	RES	NO	BSL
	Potassium	140	J	400	J	mg/kg	FSSB364	2/2	NA	400	NA	NA		NA	RES	NO	NUT
7440622	Vanadium	5	J	7.3	J	mg/kg	FSSB364	2/2	NA	7.3	NA	15**	N	7,400	RES	NO	BSL
7440666	Zinc	60.0		60		mg/kg	FSSB006	1/2	39	60	NA	1,100	N	100,000	RES	NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason: Infrequent Detection but Associated Historically (HIST)
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason: Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: N/A = Not Applicable
ND = Not Detected
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
J = Estimated Value
n = Presumptive evidence of material
C = Carcinogenic
N = Non-Carcinogenic
W = Water
NF = Nonfood
F = Food
RES=Region 9 PRG residential values equal to a carcinogenic risk of 1E-06 or a hazard qu

TABLE 2.9
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Current/Future
Medium:	Surface Water
Exposure Medium:	Surface Water
Exposure Point:	McCoy's Creek

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
	1,2,4-Trichlorobenzene	3.6	J	3.6	J	ug/L	FSSW007	1/3	10	3.6	NA	120,000*	N			NO	BSL
56553	Benzo(a)anthracene	0.83	J	2	J	ug/L	FSSW004	2/8	10	2	NA	0.0044	C			YES	ASL
50328	Benzo(a)pyrene	2.2	J	2.2	J	ug/L	FSSW004	1/8	10	2.2	NA	0.0044	C			YES	ASL
205992	Benzo(b)fluoranthene	2.2	J	2.2	J	ug/L	FSSW004	1/8	10	2.2	NA	0.0044	C			YES	ASL
191242	Benzo(g,h,i)perylene	0.7	J	2.1	J	ug/L	FSSW004	2/8	10	2.1	NA	NE				NO	NTX
207089	Benzo(k)fluoranthene	1.7	J	1.7	J	ug/L	FSSW004	1/8	10	1.7	NA	0.0044	C			YES	ASL
85687	Benzyl Butyl Phthalate	2	J	2	J	ug/L	FSSW004	1/8	10	2	NA	3,000	N			NO	BSL
	bis(2-ethylhexyl)phthalate	2.2	J	10	J	ug/L	FSSW003	2/8	10 - 19	10	NA	1.8	C			YES	ASL
86748	Carbazole	2	J	2	J	ug/L	FSSW004	1/8	10	2	NA	NE	C			NO	NTX
218019	Chrysene	0.53	J	2.2	J	ug/L	FSSW004	2/8	10	2.2	NA	0.0044	C			YES	ASL
53703	Dibenz(a,h)anthracene	1.1	J	1.1	J	ug/L	FSSW004	1/8	10	1.1	NA	0.0044	C			YES	ASL
84742	Di-n-Butyl Phthalate	1	J	1	J	ug/L	FSSW004	1/8	10	1	NA	2,700	N			NO	BSL
117840	Di-n-Octylphthalate	1.5	J	1.5	J	ug/L	FSSW004	1/8	10	1.5	NA	2,700	N			NO	BSL
206440	Fluoranthene	2	J	2	J	ug/L	FSSW004	1/8	10	2	NA	300	N			NO	BSL

*The Florida Surface Water Target Levels were used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) U.S. EPA National Recommended Water Quality Criteria-Correction April 1999, human health for consumption of water and organism values

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- NE = Not Established
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic

TABLE 2.9 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
FOREST STREET INCINERATOR

Scenario Timeframe:	Current/Future
Medium:	Surface Water
Exposure Medium:	Surface Water
Exposure Point:	McCoy's Creek

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
193395	Indeno(1,2,3-c,d)pyrene	0.65	J	2.1	J	ug/L	FSSW004	2/8	10	2.1	NA	0.0044	C			YES	ASL
120000	Pyrene	2.1	J	2.1	J	ug/L	FSSW004	1/8	10	2.1	NA	960	N			NO	BSL
7440393	Barium	0.044	J	0.064	J	mg/L	FSSW001	8/8	NA	0.064	NA	NE	N			YES	TX
7440439	Cadmium	0.0048	J	0.0048	J	mg/L	FSSW008	1/8	0.00071	0.0048	NA	0.0093	N			NO	BSL
	Calcium	73		160		mg/L	FSSW006	8/8	NA	160	NA	NE				NO	NUT
7440508	Copper	0.003	J	0.003	J	mg/L	FSSW008	1/8	0.00115 - 0.0035	0.003	NA	1,300	N			NO	BSL
57125	Cyanide	0.0059	J	0.0099	J	mg/L	FSSW006	4/8	0.005	0.0099	NA	700	N			NO	BSL
7439896	Iron	0.32		0.42		mg/L	FSSW003	8/8	NA	0.42	NA	0.3	N			YES	ASL
7439954	Magnesium	28.5		450		mg/L	FSSW006	8/8	NA	450	NA	NE				NO	NUT
7439965	Manganese	0.046		0.0795		mg/L	FSSW007	8/8	NA	0.0795	NA	0.05	N			YES	ASL
	Potassium	8.55		160	J	mg/L	FSSW006	8/8	NA	160	NA	NE				NO	NUT
	Sodium	140		3,400		mg/L	FSSW006	8/8	NA	3,400	NA	NE				NO	NUT
7440622	Vanadium	0.0055	J	0.0055	J	mg/L	FSSW003	1/8	0.0022 - 0.0063	0.0055	NA	0.026	N			NO	BSL
7440666	Zinc	0.0089	J	0.0133	J	mg/L	FSSW007	7/8	0.0079	0.0133	NA	9,100	N			NO	BSL

*The Florida Surface Water Target Levels were used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) U.S. EPA National Recommended Water Quality Criteria-Correction April 1999, human health for consumption of water and organism values

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- NE = Not Established
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic

TABLE 2.10
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater
Exposure Point:	Surficial Aquifer

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
75150	Carbon Disulfide	0.8	J	0.8	J	ug/L	FSMW012	1/9	10	0.8	NA	100	N			NO	BSL
156592	cis-1,2-Dichloroethylene	0.9	J	1	J	ug/L	FSMW014	2/9	10	1	NA	6.1				NO	BSL
7429905	Aluminum	0.074	J	0.47		mg/L	FSMW013	2/19	0.027 - 0.066	0.47	1.97	3.6	N			NO	BSL,BKG
7440393	Barium	0.022	J	0.35		mg/L	FSMW014	19/19	NA	0.35	0.02	0.26	N			YES	ASL
	Calcium	17		150		mg/L	FSMW010	19/19	NA	150	40.5	NA				NO	NUT
7440484	Cobalt	0.002	J	0.002	J	mg/L	FSMW009	1/19	0.0014	0.002	0.002	0.22	N			NO	BSL,BKG
57125	Cyanide	0.0073	J	0.0073	J	mg/L	FSMW005	1/19	0.005	0.0073	ND	0.00062	N			YES	ASL
7439896	Iron	0.15		24		mg/L	FSMW008	3/19	0.025 - 0.081	24	0.5	1.1	N			YES	ASL
7439921	Lead	0.00298		0.00617		mg/L	FSMW005	2/19	0.0015 - 0.0034	0.00617	ND	0.015	N			NO	BSL
	Magnesium	3.2	J	31		mg/L	FSMW010	19/19	NA	31	11.7	NA				NO	NUT
7439965	Manganese	0.0045	J	0.75		mg/L	FSMW005	19/19	NA	0.75	0.04	0.088	N			YES	ASL
	Potassium	1.1	J	24		mg/L	FSMW010	19/19	NA	24	8.4	NA				NO	NUT
	Sodium	5.3		73		mg/L	FSMW018	19/19	NA	73	34	NA				NO	NUT
7440622	Vanadium	0.0044	J	0.0044	J	mg/L	FSMW019	18/19	0.0022	0.0044	0.006	0.026	N			NO	BSL
7440666	Zinc	0.072		0.13		mg/L	FSMW014	2/19	0.0059 - 0.023	0.13	0.006	1.1	N			NO	BSL

(1) Minimum/maximum detected concentration.
(2) Background concentrations are not being used for this evaluation.
(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, tap water values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1.
(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.
(5) Rationale Codes Selection Reason:
Infrequent Detection but Associated Historically (HIST)
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions:
N/A = Not Applicable
ND = Not Detected
NE = Not Established
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Consider
J = Estimated Value
n = Presumptive evidence of material
C = Carcinogenic
N = Non-Carcinogenic
NF = Nonfood

TABLE 2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	Emmett Reed Community Center

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
56553	Benzo(a)anthracene	240	J	240	J	ug/kg	FCSB028	1/2	350	240	NA	620	C			YES	CPAH
50328	Benz(a)pyrene	260	J	260	J	ug/kg	FCSB028	1/2	350	260	NA	62	C			YES	ASL, CPAH
205992	Benzo(b)fluoranthene	260	J	260	J	ug/kg	FCSB028	1/2	350	260	NA	620	C			YES	CPAH
191242	Benzo(ghi)Perylene	140	J	140	J	ug/kg	FCSB028	1/2	350	140	NA	2,300,000**	C			NO	BSL
205992	Benzo(k)fluoranthene	220	J	220	J	ug/kg	FCSB028	1/2	350	220	NA	6,200	C			YES	CPAH
218019	Chrysene	250	J	250	J	ug/kg	FCSB028	1/2	350	250	NA	62,000	C			YES	CPAH
84662	Diethyl Phthalate	970		1,100		ug/kg	FCSB028	2/2	NA	1,100	NA	4,900,000	N			NO	BSL
206440	Fluoranthene	510		510		ug/kg	FCSB028	1/2	350	510	NA	230,000	N			NO	BSL
193395	Indeno (1,2,3-cd) pyrene	130	J	130	J	ug/kg	FCSB028	1/2	350	130	NA	620	C			YES	CPAH
85018	Phenanthrene	180	J	180	J	ug/kg	FCSB028	1/2	350	180	NA	2,000,000**	N			NO	BSL
206440	Pyrene	360		360		ug/kg	FCSB028	1/2	350	360	NA	230,000	N			NO	BSL
50293	P,P'-DDT	9.9	J	9.9	J	ug/kg	FCSB028	1/2	35	9.9	NA	1,700	C			NO	BSL
11096825	PCB-1260 (Aroclor 1260)	20	J	39		ug/kg	FCSB028	2/2	NA	39	NA	220	C			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food

TABLE 2.1 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	Emmett Reed Community Center

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7429905	Aluminum	1,000		2,500		mg/kg	FCSB009	11/11	NA	2,500	NA	7,600	N			NO	BSL
7440360	Antimony	0.77	J	3.2	J	mg/kg	FCSB028	4/11	0.46 - 0.52	3.2	NA	3.1	N			YES	ASL
7440382	Arsenic	3.2		4.2		mg/kg	FCSB009	2/11	0.42 - 1.6	4.2	NA	0.39	C			YES	ASL
7440393	Barium	9.6	J	370		mg/kg	FCSB009	11/11	NA	370	NA	110**	N			YES	ASL
7440417	Beryllium	0.065	J	0.2	J	mg/kg	FCSB028	8/11	0.054 - 0.059	0.2	NA	15	N			NO	BSL
7440439	Cadmium	0.089	J	3.4		mg/kg	FCSB009	9/11	0.082 - 0.09	3.4	NA	3.7	N			NO	BSL
7440702	Calcium	390	J	130,000		mg/kg	FCSB006	11/11	NA	130,000	NA	NA				NO	NUT
18540299	Chromium	2.6		21		mg/kg	FCSB009	11/11	NA	21	NA	23	C			NO	BSL
7440484	Cobalt	0.19	J	1.8	J	mg/kg	FCSB009	10/11	0.2	1.8	NA	470	N			NO	BSL
7440508	Copper	4.8	J	110		mg/kg	FCSB009	11/11	NA	110	NA	110**	N			YES	ASL
57125	Cyanide	2.1		2.1		mg/kg	FCSB009	1/11	0.51 - 0.55	2.1	NA	30**	N			NO	BSL
7439896	Iron	1,600		14,000		mg/kg	FCSB028	11/11	NA	14,000	NA	2,300	N			YES	ASL
7439921	Lead	47.1		950	J	mg/kg	FCSB009	9/19		950	NA	400	N			YES	ASL
7439954	Magnesium	64	J	1,100	J	mg/kg	FCSB006	11/11	NA	1,100	NA	NA				NO	NUT

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- NA = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food

TABLE 2.1 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	Emmett Reed Community Center

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7439965	Manganese	14		99		mg/kg	FCSB028	11/11	NA	99	NA	180	N			NO	BSL
7439976	Mercury	0.02	J	0.34	J	mg/kg	FCSB009	11/11	NA	0.34	NA	2.3	N			NO	BSL
7440020	Nickel	1	J	6.5	J	mg/kg	FCSB009	11/11	NA	6.5	NA	110**	N			NO	BSL
7440097	Potassium	52	J	120	J	mg/kg	FCSB028	11/11	NA	120	NA	NA				NO	NUT
7440224	Silver	0.51	J	0.53	J	mg/kg	FCSB009	2/11	0.18 - 0.21	0.53	NA	39	N			NO	BSL
7440622	Vanadium	3.4	J	9.6	J	mg/kg	FCSB009	11/11	NA	9.6	NA	15**	N			NO	BSL
7440666	Zinc	28	J	690	J	mg/kg	FCSB009	11/11	NA	690	NA	2,300	N			NO	BSL
1746016	2,3,7,8-TCDD (TEQ)	1	J	45		ng/kg	CLSS15	6/6	NA	45	NA	3.9	C			YES	ASL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food

TABLE 2.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	Emmett Reed Community Center

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
120127	Anthracene	160	J	160	J	ug/kg	FCSB026	1/1	NA	160	NA	2,200,000	N			NO	BSL
56553	Benzo(a)anthracene	470		470		ug/kg	FCSB026	1/1	NA	470	NA	620	C			YES	CPAH
50328	Benzo(a)pyrene	460		460		ug/kg	FCSB026	1/1	NA	460	NA	62	C			YES	ASL, CPAH
205992	Benzo(b)fluoranthene	530		530		ug/kg	FCSB026	1/1	NA	530	NA	620	C			YES	CPAH
191242	Benzo(g,h,i)perylene	260	J	260	J	ug/kg	FCSB026	1/1	NA	260	NA	2,300,000**	N			NO	BSL
205992	Benzo(k)fluoranthene	450		450		ug/kg	FCSB026	1/1	NA	450	NA	6,200	C			YES	CPAH
218019	Chrysene	500		500		ug/kg	FCSB026	1/1	NA	500	NA	62,000	C			YES	CPAH
84662	Diethyl Phthalate	1,200		1,200		ug/kg	FCSB026	1/1	NA	1,200	NA	4,900,000	N			NO	BSL
206440	Fluoranthene	1,100		1,100		ug/kg	FCSB026	1/1	NA	1,100	NA	230,000	N			NO	BSL
193395	Indeno(1,2,3-c,d)pyrene	260	J	260	J	ug/kg	FCSB026	1/1	NA	260	NA	620	C			YES	CPAH
85018	Phenanthrene	550		550		ug/kg	FCSB026	1/1	NA	550	NA	2,000,000**	N			NO	BSL
129000	Pyrene	720		720		ug/kg	FCSB026	1/1	NA	720	NA	230,000	N			NO	BSL
11096825	PCB-1260 (Aroclor 1260)	14	J	14	J	ug/kg	FCSB026	1/1	NA	14	NA	220	C			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food

TABLE 2.2 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	Emmett Reed Community Center

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7429905	Aluminum	1,600		4,900		mg/kg	FCSB026	2/2	NA	4,900	NA	7,600	N			NO	BSL
7440360	Antimony	17	J	17	J	mg/kg	FCSB026	1/2	0.61	17	NA	3.1	N			YES	ASL
7440382	Arsenic	0.69	J	20		mg/kg	FCSB026	2/2	NA	20	NA	0.39	C			YES	ASL
7440393	Barium	19	J	1100		mg/kg	FCSB026	2/2	NA	1,100	NA	110**	N			YES	ASL
7440417	Beryllium	0.28	J	0.28	J	mg/kg	FCSB026	1/2	0.07	0.28	NA	15	N			NO	BSL
7440439	Cadmium	4		4		mg/kg	FCSB026	1/2	0.11	4	NA	3.7	N			YES	ASL
7440702	Calcium	710	J	20,000		mg/kg	FCSB026	2/2	NA	20,000	NA	NA				NO	NUT
18540299	Chromium, Total	2.5		38		mg/kg	FCSB026	2/2	NA	38	NA	23	C			YES	ASL
7440484	Cobalt	4.5	J	4.5	J	mg/kg	FCSB026	1/2	0.23	4.5	NA	470	N			NO	BSL
7440508	Copper	7.3		670		mg/kg	FCSB026	2/2	NA	670	NA	110**	N			YES	ASL
57125	Cyanide	0.92	J	0.92	J	mg/kg	FCSB026	1/2	0.61	0.92	NA	30**	N			NO	BSL
7439896	Iron	1,800		59,000		mg/kg	FCSB026	2/2	NA	59,000	NA	2,300	N			YES	ASL
7439921	Lead	16		3,200	J	mg/kg	FCSB026	18/21	15 - 44	3,200	NA	400	N			YES	ASL
7439954	Magnesium	67	J	980	J	mg/kg	FCSB026	2/2	NA	980	NA	NA				NO	NUT
7439965	Manganese	11		820		mg/kg	FCSB026	2/2	NA	820	NA	180	N			YES	ASL
7439976	Mercury	0.038	J	1.3		mg/kg	FCSB026	2/2	NA	1.3	NA	2.3	N			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food

TABLE 2.2 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	Emmett Reed Community Center

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7440020	Nickel	0.9	J	21		mg/kg	FCSB026	2/2	NA	21	NA	110**	N			NO	BSL
7440097	Potassium	29	J	680	J	mg/kg	FCSB026	2/2	NA	680	NA	NA				NO	NUT
7440224	Silver	3.6		3.6		mg/kg	FCSB026	1/2	0.23	3.6	NA	39	N			NO	ASL
7440235	Sodium	86	J	610	J	mg/kg	FCSB026	2/2	NA	610	NA	NA				NO	NUT
7440622	Vanadium	5	J	12		mg/kg	FCSB026	2/2	NA	12	NA	15**	N			NO	BSL
7440666	Zinc	40		2,200	J	mg/kg	FCSB026	2/2	NA	2,200	NA	2,300	N			NO	BSL
1746016	2,3,7,8-TCDD (TEQ)	27		27		ng/kg	FCSB026	1/1	NA	27	NA	3.9	C			YES	ASL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food

TABLE 2.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	The Park - Emmett Reed

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
	Toluene	2	J	2	J	ug/kg	CLSS04	1/4	11	2	NA	52,000	N			NO	BSL
	2-Methylnaphthalene	99	J	99	J	ug/kg	FCSB043	1/7	340 - 370	99	NA	5,600 (6)	N			NO	BSL
	Acenaphthene	38	J	270	J	ug/kg	FCSB043	3/7	340 - 370	270	NA	370,000	N			NO	BSL
	Acenaphthylene	52	J	480		ug/kg	FCSB043	5/7	340 - 350	480	NA	1,100,000**	N			NO	BSL
120127	Anthracene	66	J	1,000		ug/kg	FCSB043	6/7	340	1,000	NA	2,200,000	N			NO	BSL
56553	Benzo(a)anthracene	160	J	3,200		ug/kg	FCSB043	7/7	NA	3,200	NA	620	C			YES	ASL
50328	Benzo(a)pyrene	110		3,000		ug/kg	FCSB043	7/7	NA	3,000	NA	62	C			YES	ASL
205992	Benzo(b and/or k)fluoranthene	270	J	1,700		ug/kg	CLSS03	4/4	NA	1,700	NA	620	C			YES	ASL
205992	Benzo(b)fluoranthene	190	J	4,100		ug/kg	FCSB043	3/3	NA	4,100	NA	620	C			YES	ASL
	Benzo(g,h,i)perylene	150	J	1,400		ug/kg	FCSB043	7/7	NA	1,400	NA	2,300,000	N			NO	BSL
205992	Benzo(k)fluoranthene	180	J	1,900		ug/kg	FCSB043	3/3	NA	1,900	NA	6,200				YES	CPAH
117817	Bis(2-ethyl hexyl)phthalate	390		1,100		ug/kg	CLSS02	3/7	340 - 370	1,100	NA	35,000	C			NO	BSL
	Carbazole	39	J	460		ug/kg	FCSB043	5/7	340 - 350	460	NA	24,000	C			NO	BSL
218019	Chrysene	200	J	3,200		ug/kg	FCSB043	7/7	NA	3,200	NA	62,000	C			YES	CPAH
53703	Dibenzo(a,h)anthracene	69	J	570		ug/kg	FCSB043	6/7	350	570	NA	62	C			YES	ASL
	Dibenzofuran	130	J	130	J	ug/kg	FCSB043	1/7	340 - 370	130	NA	29,000	N			NO	BSL
206440	Fluoranthene	120	J	10,000		ug/kg	FCSB043	7/7	NA	10,000	NA	230,000	N			NO	BSL
	Fluorene	34	J	57	J	ug/kg	CLSS03	2/7	340 - 370	57	NA	260,000	N			NO	BSL
193395	Indeno(1,2,3-cd)pyrene	130	J	1,200		ug/kg	FCSB043	7/7	NA	1,200	NA	620	C			YES	CPAH
	Naphthalene	45	J	130	J	ug/kg	FCSB043	2/7	340 - 370	130	NA	5,600	N			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Carcinogenic PAHs Evaluated as a Group (CPAH)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

(6) Screening value for naphthalene used.

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- NE = Not Established
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
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- W = Water
- NF = Nonfood
- F = Food
- c = Confirmed via gas chromatrography/mass spectroscopy

TABLE 2.3 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	The Park - Emmett Reed

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
85018	Phenanthrene	170	J	3,400		ug/kg	FCSB043	7/7	NA	3,400	NA	2,000,000**	N			NO	BSL
129000	Pyrene	292.5	J	4,600		ug/kg	FCSB043	7/7	NA	4,600	NA	230,000	N			NO	BSL
	Alpha-Chlordane	3		3		ug/kg	FCSB045	1/7	1.8 - 89	3	NA	1,600	C			NO	BSL
60571	Dieldrin	2.9	J	2.9	J	ug/kg	FCSB045	1/7	3.4 - 180	2.9	NA	30	C			NO	BSL
72208	Endrin	6.5		6.5		ug/kg	FCSB045	1/7	3.4 - 180	6.5	NA	1,800	N			NO	BSL
72559	p,p'-DDE	2.3	J	2.3	J	ug/kg	FCSB045	1/3	175 - 180	2.3	NA	1,700	C			NO	BSL
50293	p,p'-DDT	14		14		ug/kg	FCSB045	1/3	175 - 180	14	NA	1,700	C			NO	BSL
11096825	PCB-1260 (Aroclor 1260)	87		720		ug/kg	FCSB043	4/7	50 - 110	720	NA	220	C			YES	ASL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

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- Carcinogenic PAHs Evaluated as a Group (CPAH)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

(6) Screening value for naphthalene used.

Definitions
- N/A = Not Applicable
- ND = Not Detected
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- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
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- J = Estimated Value
- n = Presumptive evidence of material
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TABLE 2.3 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	The Park - Emmett Reed

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7429905	Aluminum	1,200		5,300		mg/kg	FCSB043	8/8	NA	5,300	NA	7,600	N			NO	BSL
7440360	Antimony	1.1	J	910		mg/kg	CLSS04	4/8	0.54 - 3	910	NA	3.1	N			YES	ASL
7440382	Arsenic	1.2	J	20		mg/kg	FCSB043	7/8	3	20	NA	0.39	C			YES	ASL
7440393	Barium	32.5	J	550	J	mg/kg	FCSB043	8/8	NA	550	NA	110**	N			YES	ASL
7440417	Beryllium	0.073	J	0.2	J	mg/kg	FCSB043	4/8	0.20 - 0.22	0.2	NA	15	N			NO	BSL
7440439	Cadmium	0.61	J	4.9		mg/kg	FCSB043	8/8	NA	4.9	NA	3.7	N			YES	ASL
	Calcium	3,000		40,000		mg/kg	CLSS02	8/8	NA	40,000	NA	N/A				NO	NUT
18540299	Chromium	5	J	28		mg/kg	FCSB043	8/8	NA	28	NA	23	N			YES	ASL
7440484	Cobalt	0.59	J	3.5	J	mg/kg	FCSB043	8/8	NA	3.5	N/A	470	N			NO	BSL
7440508	Copper	31	J	440	J	mg/kg	FCSB043	8/8	NA	440	N/A	110**	N			YES	ASL
7439896	Iron	3,200		32,500		mg/kg	FCSB054	8/8	NA	32,500	N/A	2,300	N			YES	ASL
7439921	Lead	350		6,000		mg/kg	CLSS04	12/12	NA	6,000	N/A	400	N			YES	ASL
7439954	Magnesium	390		1,200		mg/kg	CLSS02	8/8	NA	1,200	N/A	N/A				NO	NUT
7439965	Manganese	44		310		mg/kg	FCSB043	8/8	NA	310	N/A	180	N			YES	ASL
7439976	Mercury	0.069	J	0.42	J	mg/kg	FCSB043	6/8	0.10 - 0.11	0.42	N/A	2.3	N			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

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- Infrequent Detection but Associated Historically (HIST)
- Carcinogenic PAHs Evaluated as a Group (CPAH)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

(6) Screening value for naphthalene used.

Definitions:
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TABLE 2.3 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	The Park - Emmett Reed

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7440020	Nickel	3	J	19		mg/kg	FCSB043	8/8	NA	19	N/A	110**	N			NO	BSL
7440097	Potassium	95		610	J	mg/kg	FCSB043	8/8	NA	610	N/A	N/A				NO	NUT
7440224	Silver	0.44	J	4		mg/kg	FCSB043	7/8	0.205	4	N/A	39	N			NO	BSL
7440235	Sodium	115	J	680	J	mg/kg	FCSB043	7/8	130	680	N/A	N/A				NO	NUT
7440622	Vanadium	6.8	J	12		mg/kg	CLSS02 / FCSB043	8/8	NA	12	N/A	15**	N			NO	BSL
7440666	Zinc	140	J	1,300	J	mg/kg	FCSB043	8/8	NA	1,300	N/A	2,300	N			NO	BSL
1746016	2,3,7,8-TCDD (TEQ)	2	J	41		ng/kg	CLSS10	11/11	NA	41	N/A	3.9	C			YES	ASL

**The Florida Soil Cleanup Target Level (SCTL) was used.

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- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

(6) Screening value for naphthalene used.

Definitions:
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TABLE 2.4
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	The Park - Emmett Reed

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
	Toluene	7	J	8	J	ug/kg	CLSB02	2/4	11 - 12	8	NA	52,000	N			NO	BSL
88062	2,4,6-Trichlorophenol	760	J	760	J	ug/kg	CLSB03	1/8	340 - 410	760	NA	44,000	C			NO	BSL
	2-Methylnaphthalene	160	J	160	J	ug/kg	CLSB03	1/8	340 - 410	160	NA	5,600(6)	N			NO	BSL
	Acenaphthene	180	J	180	J	ug/kg	CLSB03	1/8	340 - 410	180	NA	370,000	N			NO	BSL
	Acenaphthylene	64	J	180	J	ug/kg	CLSB03	2/8	340 - 410	180	NA	1,100,000**	N			NO	BSL
120127	Anthracene	55	J	720	J	ug/kg	CLSB03	3/8	350 - 410	720	NA	2,200,000	N			NO	BSL
56553	Benzo(a)anthracene	50	J	1,900		ug/kg	CLSB03	5/8	350 - 410	1,900	NA	620	C			YES	ASL
50328	Benzo(a)pyrene	40	J	2,200		ug/kg	CLSB03	5/8	350 - 410	2,200	NA	62	C			YES	ASL
205992	Benzo(b and/or k)fluoranthene	41	J	2,000	J	ug/kg	CLSB03	2/4	350 - 410	2,000	NA	620	C			YES	ASL
205992	Benzo(b)fluoranthene	220	J	480		ug/kg	FCSB042	3/4	350	480	NA	620	C			YES	CPAH
	Benzo(g,h,i)perylene	40	J	2,400		ug/kg	CLSB03	5/8	350 - 410	2,400	NA	2,300,000**	N			NO	BSL
205992	Benzo(k)fluoranthene	180	J	430		ug/kg	FCSB033	3/4	350	430	NA	6,200	C			YES	CPAH
	Carbazole	41	J	310	J	ug/kg	CLSB03	2/8	350 - 410	310	NA	24,000	C			NO	BSL
218019	Chrysene	48	J	2,400		ug/kg	CLSB03	5/8	350 - 410	2,400	NA	62,000	C			YES	CPAH
53703	Dibenzo(a,h)anthracene	800		800		ug/kg	CLSB03	1/8	340 - 410	800	NA	62	C			YES	ASL
	Dibenzofuran	160	J	160	J	ug/kg	CLSB03	1/8	340 - 410	160	NA	29,000	N			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

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- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
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- No Toxicity Information (NTX)
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(6) Screening value for naphthalene used.

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TABLE 2.4 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	The Park - Emmett Reed

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
84662	Diethyl Phthalate	1,600		1,600		ug/kg	FCSB042	1/8	340 - 760	1,600	NA	4,900,000	N			NO	BSL
84742	Di-n-Butyl Phthalate	49	J	760	J	ug/kg	CLSB03	2/8	350 - 410	760	NA	610,000	N			NO	BSL
206440	Fluoranthene	87	J	4,100		ug/kg	CLSB03	5/8	350 - 410	4,100	NA	230,000	N			NO	BSL
	Fluorene	210	J	210	J	ug/kg	CLSB03	1/8	350 - 410	210	NA	260,000	N			NO	BSL
77474	Hexachlorocyclopentadiene	760	J	760	J	ug/kg	CLSB03	1/8	340 - 410	760	NA	42,000	N			NO	BSL
193395	Indeno(1,2,3-c,d)pyrene	150	J	1,700		ug/kg	CLSB03	4/8	350 - 410	1,700	NA	620	C			YES	ASL
	Naphthalene	240	J	240	J	ug/kg	CLSB03	1/8	340 - 410	240	NA	5,600	N			NO	BSL
85018	Phenanthrene	100	J	2,700		ug/kg	CLSB03	4/8	350 - 410	2,700	NA	2,000,000**	N			NO	BSL
129000	Pyrene	66	J	3,900		ug/kg	CLSB03	5/8	350 - 410	3,900	NA	230,000	N			NO	BSL
	Alpha-Chlordane	4.9	J	4.9	J	ug/kg	FCSB045	1/8	1.8 - 94	4.9	NA	1,600	C			NO	BSL
	Beta BHC	1.8	J	2.1		ug/kg	FCSB033	2/4	1.8 - 94	2.1	NA	320	C			NO	BSL
60571	Dieldrin	1	J	2.7	J	ug/kg	FCSB045	2/8	3.5 - 190	2.7	NA	30	C			NO	BSL
	Endrin	1.3	J	1.3	J	ug/kg	FCSB045	1/8	3.4 - 190	1.3	NA	1,800	N			NO	BSL
	Gamma-Chlordane	12		12		ug/kg	FCSB045	1/8	1.8 - 94	12	NA	1,600	C			NO	BSL
1024573	Heptachlor Epoxide	0.28	J	0.28	J	ug/kg	FCSB045	1/8	1.8 - 94	0.28	NA	53	C			NO	BSL
11096825	PCB-1260 (Aroclor 1260)	32	J	110	J	ug/kg	FCSB045	2/8	34 - 41	110	NA	220	C			NO	BSL

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(1) Minimum/maximum detected concentration.

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(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

(6) Screening value for naphthalene used.

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food

TABLE 2.4 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	The Park - Emmett Reed

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7429905	Aluminum	160		8,000		mg/kg	FCSB042	10/10	NA	8,000	NA	7,600	N			YES	ASL
7440360	Antimony	5.3	J	12	J	mg/kg	FCSB042	4/10	0.46 - 4	12	NA	3.1	N			YES	ASL
7440382	Arsenic	5.5		46		mg/kg	FCSB054	5/10	0.44 - 1.5	46	NA	0.39	C			YES	ASL
7440393	Barium	4.7	J	740	J	mg/kg	FCSB042	10/10	NA	740	NA	110**	N			YES	ASL
7440417	Beryllium	0.12	J	0.17	J	mg/kg	FCSB042, 045	3/10	0.055 - 0.25	0.17	NA	15	N			NO	BSL
7440439	Cadmium	0.34	J	9		mg/kg	FCSB054	6/10	0.084 - 0.25	9	NA	3.7	N			YES	ASL
	Calcium	980	J	37,000	J	mg/kg	FCSB042	10/10	NA	37,000	NA	NA				NO	NUT
18540299	Chromium, Total	0.83	J	41		mg/kg	FCSB042	10/10	NA	41	NA	23	C			YES	ASL
7440484	Cobalt	0.29	J	9.2	J	mg/kg	FCSB042	8/10	0 18 - 1	9.2	NA	470	N			NO	BSL
7440508	Copper	3.9	J	1,000		mg/kg	FCSB054	10/10	NA	1,000	NA	110**	N			YES	ASL
57125	Cyanide	0.53	J	0.87	J	mg/kg	FCSB042	2/14	0.48 - 0 64	0 87	NA	30**	N			NO	BSL
7439896	Iron	140		75,000		mg/kg	FCSB042	10/10	NA	75,000	NA	2,300	N			YES	ASL
7439921	Lead	19		2,800		mg/kg	FCSB034	11/12	47	2,800	NA	400	N			YES	ASL
7439954	Magnesium	33	J	1,600		mg/kg	FCSB042	8/10	90 - 110	1,600	NA	NA				NO	NUT
7439965	Manganese	3.5		730		mg/kg	FCSB042	10/10	NA	730	NA	180	N			YES	ASL
7439976	Mercury	0.015	J	1.1	J	mg/kg	FCSB045	7/10	0.11 - 0.12	1 1	NA	2 3	N			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.
(2) Background concentrations are not being used for this evaluation.
(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1
(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.
(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

(6) Screening value for naphthalene used.

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
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- F = Food

TABLE 2.4 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	The Park - Emmett Reed

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7440020	Nickel	1.1	J	45		mg/kg	FCSB042	7/10	0.20 - 1	45	NA	110**	N			NO	BSL
7440097	Potassium	31	J	940	J	mg/kg	FCSB042	8/10	30 - 50	940	NA	NA				NO	NUT
7440224	Silver	0.23	J	7.2		mg/kg	FCSB042	6/10	0 18 - 0 25	7.2	NA	39	N			NO	BSL
7440235	Sodium	120		1,400		mg/kg	FCSB042	6/10	47 - 230	1,400	NA	NA				NO	NUT
7440622	Vanadium	0.85	J	11		mg/kg	FCSB042	9/10	0.63	11	NA	15**	N			NO	BSL
7440666	Zinc	6.8	J	2,800	J	mg/kg	FCSB054	10/10	NA	2,800	NA	2,300	N			YES	ASL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

(6) Screening value for naphthalene used.

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
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- W = Water
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TABLE 2.5
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	Apartment Complex

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
56553	Benzo(a)anthracene	160	J	160	J	ug/kg	FCSB045	1/4	350 - 370	160	NA	620	C			YES	CPAH
50328	Benzo(a)pyrene	170	J	170	J	ug/kg	FCSB045	1/4	350 - 370	170	NA	62	C			YES	ASL
205992	Benzo(b)fluoranthene	190	J	190	J	ug/kg	FCSB045	1/4	350 - 370	190	NA	620	C			YES	CPAH
	Benzo(g,h,i)perylene	28	J	160	J	ug/kg	FCSB045	2/4	370	160	NA	2,300,000	N			NO	BSL
205992	Benzo(k)fluoranthene	180	J	180	J	ug/kg	FCSB045	1/4	350 - 370	180	NA	62,000	C			YES	CPAH
117817	Bis(2-ethyl hexyl)phthalate	120	J	120	J	ug/kg	FCSB020	1/4	120 - 370	120	NA	35,000	C			NO	BSL
218019	Chrysene	200	J	200	J	ug/kg	FCSB045	1/4	350 - 370	200	NA	62,000	C			YES	CPAH
53703	Dizenzo(a,h)anthracene	69	J	69	J	ug/kg	FCSB045	1/4	350 - 370	69	NA	62	C			YES	ASL
206440	Fluoranthene	350		350		ug/kg	FCSB045	1/4	350 - 370	350	NA	230,000	N			NO	BSL
193395	Indeno(1,2,3-cd)pyrene	130	J	130	J	ug/kg	FCSB045	1/4	350 - 370	130	NA	620	C			YES	CPAH
85018	Phenanthrene	170	J	170	J	ug/kg	FCSB045	1/4	350 - 370	170	NA	2,000,000**	N			NO	BSL
129000	Pyrene	340		340		ug/kg	FCSB045	1/4	350 - 370	340	NA	230,000	N			NO	BSL
	Alpha-Chlordane	0.73	J	3		ug/kg	FCSB045	4/4	NA	3	NA	1,600	C			NO	BSL
60571	Dieldrin	0.59	J	2.9	J	ug/kg	FCSB045	3/4	3.7	2.9	NA	30	C			NO	BSL
72208	Endrin	6.5		6.5		ug/kg	FCSB045	1/4	3.5 - 3.7	6.5	NA	1,800	N			NO	BSL
	Gamma-Chlordane	0.55	J	3.8		ug/kg	FCSB015	3/4	1.7	3.8	NA	1,600	C			NO	BSL
72559	p,p'-DDE	0.98	J	2.3	J	ug/kg	FCSB045	2/4	3.5 - 3.7	2.3	NA	1,700	C			NO	BSL
50293	p,p'-DDT	0.54	J	14		ug/kg	FCSB045	3/4	3.5	14	NA	1,700	C			NO	BSL
11096825	PCB-1260 (Aroclor 1260)	290	J	290	J	ug/kg	FCSB045	1/4	35 - 37	290	NA	220	C			YES	ASL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Carcinogenic PAHs Evaluated as a Group (CPAH)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- NE = Not Established
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food
- c = Confirmed via gas chromatography/mass spectroscopy

TABLE 2.5 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	Apartment Complex*

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7429905	Aluminum	1,100		3,000		mg/kg	FCSB020	6/6	NA	3,000	NA	7,600	N			NO	BSL
7440360	Antimony	0.59	J	1.1	J	mg/kg	FCSB045	2/6	0.48 - 0.56	1.1	NA	3.1	N			NO	BSL
7440382	Arsenic	1.2	J	1.7	J	mg/kg	FCSB015	4/6	0.55 - 1.1	1.7	NA	0.39	C			YES	ASL
7440393	Barium	15	J	75		mg/kg	FCSB045	6/6	NA	75	NA	110**	N			NO	BSL
7440417	Beryllium	0.073	J	0.086	J	mg/kg	FCSB110	4/6	0.097 - 0.12	0.086	NA	15	N			NO	BSL
7440439	Cadmium	0.14	J	0.94	J	mg/kg	FCSB045	5/6	0.083	0.94	NA	3.7	N			NO	BSL
	Calcium	3,000		38,000		mg/kg	FCSB045	6/6	NA	36,000	NA	N/A				NO	NUT
18540299	Chromium, Total	2.8	J	10		mg/kg	FCSB020	6/6	NA	10	NA	23	N			NO	BSL
7440484	Cobalt	0.25	J	0.67	J	mg/kg	FCSB020	6/6	NA	0.67	N/A	470	N			NO	BSL
7440508	Copper	5.2		38		mg/kg	FCSB045	6/6	NA	38	N/A	110**	N			NO	BSL
7439896	Iron	2,900	J	4,900		mg/kg	FCSB045	6/6	NA	4,900	N/A	2,300	N			YES	ASL
7439921	Lead	19		510	J	mg/kg	FCSB045	12/14	41 - 43	510	N/A	400	N			YES	ASL
7439954	Magnesium	180	J	910	J	mg/kg	FCSB045	6/6	NA	910	N/A	N/A				NO	NUT
7439965	Manganese	15		62		mg/kg	FCSB045	6/6	NA	62	N/A	180	N			NO	BSL
7439976	Mercury	0.038	J	0.096	J	mg/kg	FCSB110	4/6	0.031 - 0.035	0.096	N/A	2.3	N			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.
(2) Background concentrations are not being used for this evaluation.
(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1
(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.
(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Carcinogenic PAHs Evaluated as a Group (CPAH)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- NE = Not Established
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
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- NF = Nonfood
- F = Food
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TABLE 2.5 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	Apartment Complex*

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7440020	Nickel	0.65	J	4.1	J	mg/kg	FCSB045	6/6	NA	4.1	N/A	110**	N			NO	BSL
7440097	Potassium	48	J	110	J	mg/kg	FCSB020,045	6/6	NA	110	N/A	N/A				NO	NUT
7440224	Silver	0.44	J	0.44	J	mg/kg	FCSB045	1/6	0.18 - 0.21	0.44	N/A	39	N			NO	BSL
7440235	Sodium	120	J	240	J	mg/kg	FCSB110	2/6	47 - 55	240	N/A	N/A				NO	NUT
7440622	Vanadium	4.1	J	6.8	J	mg/kg	FCSB045	6/6	NA	6.8	N/A	15**	N			NO	BSL
7440666	Zinc	33		270		mg/kg	FCSB045	6/6	NA	270	N/A	2,300	N			NO	BSL
1746016	2,3,7,8-TCDD (TEQ)	8	J	8	J	ng/kg	CLSS17	1/1	NA	8	N/A	3.9	C			YES	ASL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.
(2) Background concentrations are not being used for this evaluation.
(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1
(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.
(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Carcinogenic PAHs Evaluated as a Group (CPAH)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
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- SQL = Sample Quantitation Limit
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- J = Estimated Value
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- NF = Nonfood
- F = Food
- c = Confirmed via gas chromatography/mass spectroscopy

TABLE 2.6
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	Apartment Complex

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
120127	Anthracene	35	J	35	J	ug/kg	FCSB020	1/3	370 - 400	35	NA	2,200,000	N			NO	BSL
56553	Benzo(a)anthracene	140	J	190	J	ug/kg	FCSB045	2/3	400	190	NA	620	C			YES	CPAH
50328	Benzo(a)pyrene	120	J	250	J	ug/kg	FCSB045	2/3	400	250	NA	62	C			YES	ASL
205992	Benzo(b)fluoranthene	140	J	220	J	ug/kg	FCSB045	2/3	400	220	NA	620	C			YES	CPAH
	Benzo(g,h,i)perylene	100	J	220	J	ug/kg	FCSB045	2/3	400	220	NA	2,300,000**	N			NO	BSL
205992	Benzo(k)fluoranthene	100	J	180	J	ug/kg	FCSB045	2/3	400	180	NA	6,200	C			YES	CPAH
	Benzyl Butyl Phthalate	85	J	85	J	ug/kg	FCSB020	1/3	370 - 400	85	NA	1,200,000	N			NO	BSL
117817	Bis(2-ethyl hexyl)phthalate	94	J	170	J	ug/kg	FCSB020	2/3	370	170	NA	35,000	C			NO	BSL
218019	Chrysene	150	J	180	J	ug/kg	FCSB045	2/3	400	180	NA	62,000	C			YES	CPAH
206440	Fluoranthene	200	J	250	J	ug/kg	FCSB020	2/3	400	250	NA	230,000	N			NO	BSL
193395	Indeno(1,2,3-c,d)pyrene	91	J	150	J	ug/kg	FCSB045	2/3	400	150	NA	620	C			YES	CPAH
85018	Phenanthrene	100	J	160	J	ug/kg	FCSB020	2/3	400	160	NA	2,000,000**	N			NO	BSL
129000	Pyrene	240	J	340	J	ug/kg	FCSB045	2/3	400	340	NA	230,000	N			NO	BSL
309002	Aldrin	19		19		ug/kg	FCSB020	1/3	1.9 - 2	19	NA	29	C			NO	BSL
	Alpha-Chlordane	4.9	J	30	J	ug/kg	FCSB020	2/3	2	30	NA	1,600	C			NO	BSL
	Beta BHC	1.8	J	1.8	J	ug/kg	FCSB045	1/3	2 - 9.6	1.8	NA	320	C			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

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(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food

TABLE 2.6 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	Apartment Complex

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
60571	Dieldrin	2.7	J	18	J	ug/kg	FCSB020	2/3	4	18	NA	30	C			NO	BSL
	Endrin	1.3	J	1.6	J	ug/kg	FCSB020	2/3	4	1.6	NA	1,600	N			NO	BSL
	Gamma-Chlordane	12		39	J	ug/kg	FCSB020	2/3	2	39	NA	1,600	C			NO	BSL
76448	Heptachlor	3.1	J	3.1	J	ug/kg	FCSB020	1/3	1.9 - 2	3.1	NA	110	C			NO	BSL
1024573	Heptachlor Epoxide	0.28	J	0.99	J	ug/kg	FCSB020	2/3	2	0.99	NA	53	C			NO	BSL
	p,p'-DDD	1.9	J	1.9	J	ug/kg	FCSB020	1/3	3.7 - 4	1.9	NA	1,700	C			NO	BSL
72559	p,p'-DDE	7.7	J	7.7	J	ug/kg	FCSB020	1/3	3.7 - 4	7.7	NA	1,700	C			NO	BSL
11096825	PCB-1260 (Aroclor 1260)	110	J	110	J	ug/kg	FCSB045	1/3	40 - 190	110	NA	220	C			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.
(2) Background concentrations are not being used for this evaluation.
(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1
(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.
(5) Rationale Codes Selection Reason: Infrequent Detection but Associated Historically (HIST)
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason: Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: N/A = Not Applicable
ND = Not Detected
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
J = Estimated Value
n = Presumptive evidence of material
C = Carcinogenic
N = Non-Carcinogenic
W = Water
NF = Nonfood
F = Food

TABLE 2.6 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	Apartment Complex

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7429905	Aluminum	260		3,300		mg/kg	FCSB045	4/4	NA	3,300	NA	7,600	N			NO	BSL
7440360	Antimony	1	J	7.8	J	mg/kg	FCSB045	3/4	0.6	7.8	NA	3.1	N			YES	ASL
7440382	Arsenic	2	J	9.6		mg/kg	FCSB045	3/4	0.54	9.6	NA	0.39	C			YES	ASL
7440393	Barium	3.1	J	490		mg/kg	FCSB045	4/4	NA	490	NA	110**	N			YES	ASL
7440417	Beryllium	0.15	J	0.17	J	mg/kg	FCSB045	2/4	0.059 - 0.069	0.17	NA	15	N			NO	BSL
7440439	Cadmium	0.36	J	2.9		mg/kg	FCSB045	3/4	0.1	2.9	NA	3.7	N			NO	BSL
	Calcium	79	J	40,000		mg/kg	FCSB020	4/4	NA	40,000	NA	NA				NO	NUT
18540299	Chromium, Total	9.4		18		mg/kg	FCSB045	3/4	0.68	18	NA	23	C			NO	BSL
7440484	Cobalt	0.63	J	2.3	J	mg/kg	FCSB045	3/4	0.23	2.3	NA	470	N			NO	BSL
7440508	Copper	22		350		mg/kg	FCSB045	3/4	0.87	350	NA	110**	N			YES	ASL
7439896	Iron	190	J	16,000		mg/kg	FCSB045	4/4	NA	16,000	NA	2,300	N			YES	ASL
7439921	Lead	2.1	J	1,100	J	mg/kg	FCSB045	7/14	14 - 43	1,100	NA	400	N			YES	ASL
7439954	Magnesium	9.4	J	940	J	mg/kg	FCSB020	4/4	NA	940	NA	NA				NO	NUT
7439965	Manganese	62		290		mg/kg	FCSB045	3/4	0.76	290	NA	180	N			YES	ASL
7439976	Mercury	0.14	J	1.1	J	mg/kg	FCSB045	3/3	NA	1.1	NA	2.3	N			NO	BSL
7440020	Nickel	2.7	J	10		mg/kg	FCSB045	3/4	0.52	10	NA	110**	N			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food

TABLE 2.6 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	Apartment Complex

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7440097	Potassium	30	J	400	J	mg/kg	FCSB045	4/4	NA	400	NA	NA				NO	NUT
7440224	Silver	0.4	J	2	J	mg/kg	FCSB045	3/4	0.23	2	NA	39	N			NO	BSL
7440235	Sodium	74.5	J	380	J	mg/kg	FCSB045	3/4	59	380	NA	NA				NO	NUT
7440622	Vanadium	4.9	J	8	J	mg/kg	FCSB045	3/4	0.79	8	NA	15**	N			NO	BSL
7440666	Zinc	140	J	1,100		mg/kg	FCSB045	3/3	NA	1,100	NA	2,300	N			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) *Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6* or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions
- N/A = Not Applicable
- ND = Not Detected
- SQL = *Sample Quantitation Limit*
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food

TABLE 2.7
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Sediment
Exposure Medium:	Sediment
Exposure Point:	Unnamed Creek

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
67641	Acetone	5	J	10	J	ug/kg	FCSW002	2/2	NA	10	NA	160,000	N			NO	BSL
	2-Methylnaphthalene	44	J	44	J	ug/kg	FCSW010	1/5	340 - 5,500	44	NA	5,600 (6)	N			NO	BSL
	Acenaphthene	110	J	110	J	ug/kg	FCSW010	1/5	340 - 5,500	110	NA	370,000	N			NO	BSL
	Acenaphthylene	72	J	72	J	ug/kg	FCSW010	1/5	340 - 5,500	72	NA	1,100,000**	N			NO	BSL
120127	Anthracene	110	J	270	J	ug/kg	FCSW010	2/5	340 - 5,500	270	NA	2,200,000	N			NO	BSL
56553	Benzo(a)anthracene	28	J	1,100		ug/kg	FCSW010	4/5	5,500	1,100	NA	620	C			YES	ASL
50328	Benzo(a)pyrene	65	J	1,300		ug/kg	FCSW010	3/5	360 - 5,500	1,300	NA	62	C			YES	ASL
205992	Benzo(b)fluoranthene	39	J	1,200		ug/kg	FCSW010	4/5	5,500	1,200	NA	620	C			YES	ASL
	Benzo(g,h,i)perylene	33	J	1,000		ug/kg	FCSW010	4/5	5,500	1,000	NA	2,300,000**	N			NO	BSL
205992	Benzo(k)fluoranthene	74	J	1,300		ug/kg	FCSW010	3/5	360 - 5,500	1,300	NA	6,200	C			YES	CPAH
	Benzyl Butyl Phthalate	110	J	110	J	ug/kg	FCSW010	1/5	340 - 5,500	110	NA	1,200,000	N			NO	BSL
117817	Bis(2-ethyl hexyl)phthalate	740		760		ug/kg	FCSW007	2/5	340 - 5,500	760	NA	35,000	C			NO	BSL
	Carbazole	65	J	250	J	ug/kg	FCSW010	2/5	340 - 5,500	250	NA	24,000	C			NO	BSL
218019	Chrysene	35	J	1,400		ug/kg	FCSW010	4/5	5,500	1,400	NA	62,000	C			NO	BSL
	Dibenzofuran	58	J	58	J	ug/kg	FCSW010	1/5	340 - 5,500	58	NA	29,000	N			NO	BSL
206440	Fluoranthene	78	J	2,500		ug/kg	FCSW010	3/5	360 - 5,500	2,500	NA	230,000	N			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 *Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6* or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section; as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

(6) Screening value for naphthalene used.

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SOL = *Sample Quantitation Limit*
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- *W = Water*
- NF = Nonfood
- *F = Food*

TABLE 2.7 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Sediment
Exposure Medium:	Sediment
Exposure Point:	Unnamed Creek

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
	Fluorene	120	J	120	J	ug/kg	FCSW010	1/5	340 - 5,500	120	NA	260,000	N			NO	BSL
193395	Indeno(1,2,3-c,d)pyrene	270	J	630		ug/kg	FCSW010	2/5	340 - 5,500	630	NA	620	C			YES	ASL
	Naphthalene	52	J	52	J	ug/kg	FCSW010	1/5	340 - 410	52	NA	5,600	N			NO	BSL
85018	Phenanthrene	28	J	1,500		ug/kg	FCSW010	3/5	360 - 5,500	1,500	NA	2,000,000**	N			NO	BSL
129000	Pyrene	120	J	2,300		ug/kg	FCSW010	3/5	360 - 5,500	2,300	NA	230,000	N			NO	BSL
	Alpha-Chlordane	1.5	J	69		ug/kg	FCSW002	5/7	2.1 - 2.3	69	NA	1,600	C			NO	BSL
	Beta BHC	3.9		3.9		ug/kg	FCSW010	1/7	1.8 - 2.8	3.9	NA	320	C			NO	BSL
60571	Dieldrin	15		15		ug/kg	FCSW010	1/7	3.4 - 5.5	15	NA	30	C			NO	BSL
	Endrin	23	J	23	J	ug/kg	FCSW010	1/7	3.4 - 5.5	23	NA	1,600	N			NO	BSL
	Gamma-Chlordane	3		92	J	ug/kg	FCSW010	5/7	2.1 - 2.3	92	NA	1,600	C			NO	BSL
76448	Heptachlor	1.1	J	1.1	J	ug/kg	FCSW010	1/7	1.8 - 2.8	1.1	NA	110	C			NO	BSL
1024573	Heptachlor Epoxide	7.6		7.6		ug/kg	FCSW010	1/7	1.8 - 2.8	7.6	NA	53	C			NO	BSL
	p,p'-DDD	2.7	J	19	J	ug/kg	FCSW002	2/7	3.4 - 4.5	19	NA	2,400	C			NO	BSL
72559	p,p'-DDE	0.53	J	6.1	J	ug/kg	FCSW002	4/7	3.4 - 4.5	6.1	NA	1,700	C			NO	BSL
50293	p,p'-DDT	8.7	J	8.7	J	ug/kg	FCSW010	1/7	3.4 - 5.5	8.7	NA	1,700	C			NO	BSL
11096825	PCB-1260 (Aroclor 1260)	19	J	370		ug/kg	FCSW010	4/7	41 - 55	370	NA	220	C			YES	ASL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.
(2) Background concentrations are not being used for this evaluation.
(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1
(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.
(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

(6) Screening value for naphthalene used.

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
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- F = Food

TABLE 2.7 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Sediment
Exposure Medium:	Sediment
Exposure Point:	Unnamed Creek

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7429905	Aluminum	1,500		5,100		mg/kg	FCSW007	5/5	NA	5,100	NA	7,600	N			NO	BSL
7440360	Antimony	0.86	J	7.6	J	mg/kg	FCSW007	5/5	NA	7.6	NA	3.1	N			YES	ASL
7440382	Arsenic	1.3	J	13		mg/kg	FCSW010	5/5	NA	13	NA	0.39	C			YES	ASL
7440393	Barium	72	J	410	J	mg/kg	FCSW007	5/5	NA	410	NA	110**	N			YES	ASL
7440417	Beryllium	0.11	J	0.35	J	mg/kg	FCSW007	5/5	NA	0.35	NA	15	N			NO	BSL
7440439	Cadmium	0.78	J	7.1		mg/kg	FCSW010	5/5	NA	7.1	NA	3.7	N			YES	ASL
	Calcium	3,600	J	50,000	J	mg/kg	FCSW010	5/5	NA	50,000	NA	NA				NO	NUT
18540299	Chromium, Total	5.9	J	60	J	mg/kg	FCSW010	5/5	NA	60	NA	23	C			YES	ASL
7440484	Cobalt	0.65	J	7.3	J	mg/kg	FCSW010	5/5	NA	7.3	NA	470	N			NO	BSL
7440508	Copper	23	J	270	J	mg/kg	FCSW007	5/5	NA	270	NA	110**	N			YES	ASL
57125	Cyanide	1.3		1.5		mg/kg	FCSW008	2/5	0.52 - 0.85	1.5	NA	30**	N			NO	BSL
7439898	Iron	2,500	J	20,000	J	mg/kg	FCSW007	5/5	NA	20,000	NA	2,300	N			YES	ASL
7439921	Lead	180		1,400		mg/kg	FCSW007	5/5	NA	1,400	NA	400	N			YES	ASL
7439954	Magnesium	170	J	1,600		mg/kg	FCSW010	5/5	NA	1,600	NA	NA				NO	NUT
7439965	Manganese	11	J	120	J	mg/kg	FCSW010	5/5	NA	120	NA	180	N			NO	BSL
7439976	Mercury	0.35	J	0.35	J	mg/kg	FCSW010	1/5	0.066 - 0.43	0.35	NA	2.3	N			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.
(2) Background concentrations are not being used for this evaluation.
(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1
(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.
(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

(6) Screening value for naphthalene used.

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- *ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered*
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TABLE 2.7 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Sediment
Exposure Medium:	Sediment
Exposure Point:	Unnamed Creek

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7440020	Nickel	1.6	J	21		mg/kg	FCSW010	5/5	NA	21	NA	110**	N			NO	BSL
7440097	Potassium	70	J	350	J	mg/kg	FCSW010	5/5	NA	350	NA	NA				NO	NUT
7440224	Silver	0.7	J	1.8	J	mg/kg	FCSW007	2/5	0.18 - 0.32	1.8	NA	39	N			NO	BSL
7440235	Sodium	51	J	250	J	mg/kg	FCSW010	4/5	82	250	NA	NA				NO	NUT
7440622	Vanadium	4.5	J	23		mg/kg	FCSW010	5/5	NA	23	NA	15**	N			YES	ASL
7440666	Zinc	130		1,400		mg/kg	FCSW010	5/5	NA	1,400	NA	2,300	N			NO	BSL
1746016	2,3,7,8-TCDD (TEQ)	18.8		18.8		ng/kg	FCSW008	1/1	NA	18.8	NA	3.9	C			YES	ASL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

(6) Screening value for naphthalene used.

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food

TABLE 2.8
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Surface Water
Exposure Medium:	Surface Water
Exposure Point:	Unnamed Creek

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
67663	Chloroform	1.6	J	1.6	J	ug/L	FCSW005	1/3	10	1.6	NA	5.7	C			NO	BSL
79016	Trichloroethylene (TCE)	0.71	J	0.71	J	ug/L	FCSW005	1/3	10	0.71	NA	2.7	C			NO	BSL
56553	Benzo(a)anthracene	0.46	J	0.53	J	ug/L	FCSW006	2/10	10	0.53	NA	0.0044	C			YES	ASL
191242	Benzo(g,h,i)perylene	0.75	J	0.75	J	ug/L	FCSW006	1/10	10	0.75	NA	NE				NO	NTX
85687	Benzyl Butyl Phthalate	0.47	J	0.61	J	ug/L	FCSW006	3/10	10	0.61	NA	3,000	N			NO	BSL
	Carbazole	0.67	J	0.67	J	ug/L	FCSW006	1/10	10	0.67	NA	NE				YES	TX
218019	Chrysene	0.52	J	0.52	J	ug/L	FCSW006	1/10	10	0.52	NA	0.0044	C			YES	ASL
84662	Diethyl Phthalate	1.1	J	1.1	J	ug/L	FCSW011	1/10	10	1.1	NA	23,000	N			NO	BSL
84742	Di-n-Butyl Phthalate	0.55	J	2.6	J	ug/L	FCSW005	2/10	10	2.6	NA	360	N			NO	BSL
117840	Di-n-Octylphthalate	0.54	J	0.54	J	ug/L	FCSW006	1/10	10	0.54	NA	NE				YES	TX
206440	*Fluoranthene*	0.35	J	0.71	J	ug/L	FCSW006	2/10	10	0.71	NA	150	N			NO	BSL

*The Florida Surface Water Target Levels were used.

(1) Minimum/maximum detected concentration.
(2) Background concentrations are not being used for this evaluation.
(3) U.S. EPA National Recommended Water Quality Criteria-Correction April 1999, human health for consumption of water and organism values
(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.
(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- NE = Not Established
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic

TABLE 2.8 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Surface Water
Exposure Medium:	Surface Water
Exposure Point:	Unnamed Creek

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
193395	Indeno(1,2,3-c,d)pyrene	0.64	J	0.64	J	ug/L	FCSW006	1/10	10	0.64	NA	0.0044	C			YES	ASL
120000	Pyrene	0.67	J	0.67	J	ug/L	FCSW006	1/10	10	0.67	NA	18	N			NO	BSL
58899	Gamma BHC (Lindane)	0.0069	J	0.0069	J	ug/L	FCSW013	1/10	0.05	0.0069	NA	0.019	C			NO	BSL
7429905	Aluminum	0.035	J	2.6		mg/L	FCSW002	4/10	0.027 - 0.15	2.6	NA	13*	N			NO	BSL
7440382	Arsenic	0.0045	J	0.0045	J	mg/L	FCSW001	1/10	0.0032 - 0.0069	0.0045	NA	0.018	C			NO	BSL
7440393	Barium	0.055	J	0.18	J	mg/L	FCSW002	10/10	NA	0.18	NA	NE	N			YES	TX
	Calcium	20		150		mg/L	FCSW002	10/10	NA	150	NA	NE				NO	NUT
18540299	Chromium, Total	0.0018	J	0.0069	J	mg/L	FCSW002	4/10	0.0017	0.0069	NA	NE	N			YES	TX
7440508	Copper	0.00175	J	0.014	J	mg/L	FCSW002	3/10	0.0012 - 0.0039	0.014	NA	140	N			NO	BSL
57125	Cyanide	0.0066	J	0.008	J	mg/L	FCSW011	4/10	0.005 - 0.0057	0.008	NA	700	N			NO	BSL
7439896	Iron	1.6		13		mg/L	FCSW003	9/10	0.096	13	NA	0.3	N			YES	ASL

*The Florida Surface Water Target Levels were used.

(1) Minimum/maximum detected concentration.
(2) Background concentrations are not being used for this evaluation.
(3) U.S. EPA National Recommended Water Quality Criteria-Correction April 1999, human health for consumption of water and organism values
(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.
(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- NE = Not Established
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic

TABLE 2.8 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Current/Future
Medium:	Surface Water
Exposure Medium:	Surface Water
Exposure Point:	Unnamed Creek

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7439921	Lead	0.014		0.053		mg/L	FCSW002	3/10	0.0015 - 0.0078	0.053	NA	15	N			NO	BSL
	Magnesium	7		19		mg/L	FCSW002/003	10/10	NA	19	NA	NE				NO	NUT
7439965	Manganese	0.031		0.25		mg/L	FCSW003	10/10	NA	0.25	NA	NE	N			YES	TX
7439976	Mercury	0.000079	J	0.0001	J	mg/L	FCSW005	3/10	0.000072	0.0001	NA	0.050	N			NO	BSL
	Potassium	1.6	J	15		mg/L	FCSW003	10/10	NA	15	NA	NE				NO	NUT
	Sodium	31.5		75		mg/L	FCSW003	10/10	NA	75	NA	NE				NO	NUT
7440622	Vanadium	0.0027	J	0.01	J	mg/L	FCSW002	3/10	0.0022 - 0.0032	0.01	NA	26	N			NO	BSL
7440666	Zinc	0.007	J	0.096		mg/L	FCSW002	6/10	0.0059 - 0.013	0.096	NA	1,100	N			NO	BSL

*The Florida Surface Water Target Levels were used.

(1) Minimum/maximum detected concentration.
(2) Background concentrations are not being used for this evaluation.
(3) U.S. EPA National Recommended Water Quality Criteria-Correction April 1999, human health for consumption of water and organism values
(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.
(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- NE = Not Established
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic

TABLE 2.9
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater
Exposure Point:	Surficial Aquifer

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
96128	1,2-Dibromo-3-Chloropropane	0.86	J	1.4	J	ug/L	FCMW001	2/5	10	1.4	NA	0.048	C			YES	ASL
75150	Carbon Disulfide	2.3	J	2.3	J	ug/L	FCMW001	1/5	10	2.3	NA	100	N			NO	BSL
83329	Acenaphthene	0.36	J	0.36	J	ug/L	FCMW001	1/5	10	0.36	NA	37	N			NO	BSL
86748	Carbazole	0.65	J	0.65	J	ug/L	FCMW001	1/5	10	0.65	NA	3.4	C			NO	BSL
106445	Cresols, M&P	1.2	J	1.2	J	ug/L	FCMW005	1/5	10	1.2	NA	18 (6)	N			NO	BSL
53469219	PCB-1242 (Arochlor 1242)	1.4	J	1.4	J	ug/L	FCMW001	1/5	1	1.4	NA	0.034	C			YES	ASL

(1) Minimum/maximum detected concentration.
(2) Background concentrations are not being used for this evaluation.
(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6
(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.
(5) Rationale Codes Selection Reason:
Infrequent Detection but Associated Historically (HIST)
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

(6) Screening value for 4-methylphenol used.
4-Methylphenol = p-Cresol
3-Methylphenol = m-Cresol

Definitions:
N/A = Not Applicable
ND = Not Detected
NE = Not Established
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
J = Estimated Value
n = Presumptive evidence of material
C = Carcinogenic
N = Non-Carcinogenic
NF = Nonfood

TABLE 2.9 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
5TH AND CLEVELAND

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater
Exposure Point:	Surficial Aquifer

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7429905	Aluminum	275		1,200		ug/L	FCMW005	2/5	0.027 - 0.13	1200	NA	3600	N			NO	BSL
7440382	Arsenic	3.5	J	3.5	J	ug/L	FCMW003	1/5	0.0032	3.5	NA	0.045	C			YES	ASL
7440393	Barium	55	J	95	J	ug/L	FCMW002	5/5	NA	95	NA	260	N			NO	BSL
	Calcium	2,600	J	140,000		ug/L	FCMW002	5/5	NA	140000	NA	NA				NO	NUT
7440484	Cobalt	1.4	J	1.6	J	ug/L	FCMW004	2/5	0.0014	1.6	NA	220	N			NO	BSL
7439896	Iron	60	J	6,600		ug/L	FCMW005	5/5	NA	6600	NA	1,100	N			YES	ASL
7439921	Lead	0.79		1.482		ug/L	FCMW002	2/5	0.44 - 0.52	1.482	NA	15	N			NO	BSL
	Magnesium	1,550	J	26,000		ug/L	FCMW003	5/5	NA	26000	NA	NA				NO	NUT
7439965	Manganese	7.35	J	56		ug/L	FCMW004	5/5	NA	56	NA	88	N			NO	BSL
	Potassium	1,400	J	63,000		ug/L	FCMW003	5/5	NA	63000	NA	NA				NO	NUT
	Sodium	17,000		90,000		ug/L	FCMW004	5/5	NA	90000	NA	NA				NO	NUT
7440622	Vanadium	6.5	J	19	J	ug/L	FCMW001	3/5	0.0022	19	NA	26	N			NO	BSL

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

(6) Screening value for 4-methylphenol used.
4-Methylphenol = p-Cresol
3-Methylphenol = m-Cresol

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- NE = Not Established
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- NF = Nonfood

TABLE 2.1
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
LONNIE C. MILLER

Scenario Timeframe:	Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	The Park

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
309002	Aldrin	1.6	J	1.6	J	ug/kg	MMPSS09	1/27	1.8 - 4	1.6	NA	29	C			NO	BSL
57749	Alpha-Chlordane /2	1.9		20	J	ug/kg	LMSB059	9/26	1.8 - 20	20	NA	1,600	C			NO	BSL
60571	Dieldrin	1.4	J	22	J	ug/kg	MPSS05	7/26	3.4 - 15	22	NA	30	C			NO	BSL
72208	Endrin	4.6		4.6		ug/kg	LMSB061	1/26	3.4 - 15	4.6	NA	1,800	N			NO	BSL
72208	Endrin Aldehyde	3.3	J	3.3	J	ug/kg	LMSB061	1/26	3.4 - 15	3.3	NA	1,800	N			NO	BSL
57749	Gamma-Chlordane	2.8		16	J	ug/kg	LMSB132	9/26	1.8 - 8	16	NA	1,600	C			NO	BSL
1024573	Heptachlor Epoxide	0.26	J	3.6	J	ug/kg	LMSB132	2/26	1.8 - 7.2	3.6	NA	53	C			NO	BSL
72548	p,p'-DDD	0.78	J	66	J	ug/kg	LMSB132	9/43	3.4 - 15	66	NA	2,400	C			NO	BSL
72559	p,p'-DDE	0.37	J	210	J	ug/kg	LMSB132	16/48	3.4 - 9.4	210	NA	1,700	C			NO	BSL
50293	p,p'-DDT	1.6	J	880		ug/kg	LMSB132	10/48	3.4 - 48	880	NA	1,700	C			NO	BSL
53469219	PCB-1242 (Arochlor 1242)	66	J	66	J	ug/kg	MPSS06	1/45	34 - 150	66	NA	220	C			NO	BSL
11097691	PCB-1254 (Arochlor 1254)	60	J	60	J	ug/kg	LMSB059	1/25	34 - 150	60	NA	220	C			NO	BSL
11096825	PCB-1260 (Arochlor 1260	52		700		ug/kg	MPSS07	12/26	34 - 50	700	NA	220	C			YES	ASL
108883	Toluene	2	J	2	J	ug/kg	MPSS11	1/13	10 - 13	2	NA	59,000	N			NO	BSL
121142	2,4-Dinitrotoluene	350	J	350	J	ug/kg	LMSB079	1/27	340 - 710	350	NA	120,000	N			NO	BSL
606202	2,6-Dinitrotoluene	520		520		ug/kg	LMSB079	1/27	340 - 710	520	NA	6,100	N			NO	BSL
101553	4-Bromophenyl Phenyl Ethe	80	J	80	J	ug/kg	LMSB079	1/27	340 - 710	80	NA	NA				NO	NUT
106478	4-Chloroaniline	52	J	59	J	ug/kg	LMSB084	2/27	340 - 710	59	NA	240,000	N			NO	BSL
120127	Anthracene	31	J	99	J	ug/kg	LMSB061	3/27	340 - 710	99	NA	2,200,000	N			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1.

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
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- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
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- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food

TABLE 2.1 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
LONNIE C. MILLER

Scenario Timeframe:	Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	The Park

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
56553	Benzo(a)anthracene	44	J	710		ug/kg	LMSB061	7/27	340 - 710	710	NA	620	C			YES	ASL
50328	Benzo(a)pyrene	47	J	630		ug/kg	LMSB061	10/27	50 - 710	630	NA	62	C			YES	ASL
	Benzo(b and/or k)fluoranthe	120	J	1,000	J	ug/kg	MPSS14	3/12	350 - 710	1000	NA	620	C			YES	ASL
205992	Benzo(b)fluoranthene	50	J	670		ug/kg	LMSB061	5/15	21 -450	670	NA	620	C			YES	ASL
	Benzo(g,h,i)perylene	50	J	370		ug/kg	LMSB061	6/27	30 - 710	370	NA	2,300,000**	C			NO	BSL
205992	Benzo(k)fluoranthene	45	J	570		ug/kg	LMSB061	5/15	30 - 450	570	NA	6,200	C			YES	CPAH
85687	Benzyl Butyl Phthalate	92	J	100	J	ug/kg	LMSB056	2/28	340 - 710	100	NA	1,200,000	N			NO	BSL
117817	bis(2-ethylhexyl) Phthalate	84	J	9,300		ug/kg	LMSB132	8/27	340 - 830	9300	NA	35,000	C			NO	BSL
86748	Carbazole	84	J	84	J	ug/kg	LMSB061	1/27	340 - 710	84	NA	24,000	C			NO	BSL
218019	Chrysene	55	J	560		ug/kg	MPSS14	9/27	340 - 710	560	NA	62,000	C			YES	CPAH
53703	Dibenz(a,h)anthracene	65	J	150	J	ug/kg	LMSB061	2/27	340 - 710	150	NA	62	C			YES	ASL
84662	Diethyl Phthalate	59	J	59	J	ug/kg	LMSB132	1/27	340 - 710	59	NA	4,900,000	N			NO	BSL
13113	Dimethyl Phthalate	180	J	180	J	ug/kg	LMSB079	1/27	340 - 710	180	NA	100,000,000	N			NO	BSL
84742	Di-n-butyl Phthalate	32	J	1,000		ug/kg	LMSB132	3/29	340 - 710	1000	NA	610,000	N			NO	BSL
206440	Fluoranthene	38	J	1,600		ug/kg	LMSB061	10/27	340 - 710	1600	NA	230,000	N			NO	BSL
193395	Indeno(1,2,3-c,d)pyrene	42	J	410	J	ug/kg	LMSB061	4/27	340 - 710	410	NA	620	C			YES	CPAH
78591	Isophorone	460		460		ug/kg	LMSB079	1/27	340 - 710	460	NA	510,000	C			NO	BSL
85018	Phenanthrene	28	J	490		ug/kg	LMSB132	4/27	340 - 710	490	NA	2,000,000**	N			NO	BSL
129000	Pyrene	79	J	1,000	J	ug/kg	LMSB061	9/27	340- 710	1000	NA	230,000	N			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food

TABLE 2.1 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
LONNIE C. MILLER

Scenario Timeframe:	Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	The Park

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
7429905	Aluminum	500		20,000		mg/kg	LMSB056	53/53	NA	20,000	NA	7,600	N			YES	ASL
7440360	Antimony	0.58	J	40	J	mg/kg	MPPSS13	33/48	0.41 - 20	40	NA	3.1	N			YES	ASL
7440382	Arsenic	0.47	J	17.5		mg/kg	LMSB051	40/52	0.42 - 0.97	17.5	NA	0.39	C			YES	ASL
7440393	Barium	4.6	J	830		mg/kg	LMSB056	52/52	NA	830	NA	110**	N			YES	ASL
7440417	Beryllium	0.062	J	0.21	J	mg/kg	LMSB056	19/52	0.053 - 0.41	0.21	NA	15	N			NO	BSL
7440439	Cadmium	0.11	J	8.2	J	mg/kg	MPSS05	41/52	0.081 - 0.24	8.2	NA	3.7	N			YES	ASL
	Calcium	150	J	88,000		mg/kg	LMSB028	52/52	NA	88,000	NA	NA				NO	NUT
18540299	Chromium, Total	2.3	J	160		mg/kg	LMSB038	49/52	1 - 1.2	160	NA	23	C			YES	ASL
7440484	Cobalt	0.3	J	20		mg/kg	LMSB132	40/53	0.18 - 1	20	NA	470	N			NO	BSL
7440508	Copper	1.4	J	4,200	J	mg/kg	LMSB057	51/53	150 - 660	4,200	NA	110**	N			YES	ASL
57125	Cyanide	0.92	J	5.50	J	mg/kg	LMSB051	17/47	0.49 - 1.3	5.5	NA	1.1	N			YES	BSL
7439896	Iron	430		220,000		mg/kg	LMSB132	53/53	NA	220,000	NA	2,300	N			YES	ASL
7439921	Lead	10		4,700	J	mg/kg	LMSB132	98/117	15 - 65	4,700	NA	400	N			YES	ASL

**The Florida Soil Cleanup Target Level (SGTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

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- SQL = Sample Quantitation Limit
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TABLE 2.1 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
LONNIE C. MILLER

Scenario Timeframe:	Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	The Park

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
7439954	Magnesium	30	J	6,300		mg/kg	LMSB028	53/53	NA	6,300	NA	NA				NO	NUT
7439965	Manganese	6	J	1,600		mg/kg	LMSB135	53/53	NA	1,600	NA	180	N			YES	ASL
7439976	Mercury	0.0085	J	2.15		mg/kg	LMSB051	47/50	0.0028 - 0.31	2.15	NA	2.3	N			NO	BSL
7440020	Nickel	0.4	J	290	J	mg/kg	LMSB142	51/53	0.42 - 0.44	290	NA	110**	N			YES	ASL
	Potassium	21	J	880	J	mg/kg	LMSB092	50/53	8.1 - 9.4	880	NA	NA				NO	NUT
7782492	Selenium	0.81	J	6.6	J	mg/kg	MPSS13	13/53	0.4 - 2	7	NA	39	N			NO	BSL
7440224	Silver	0.22	J	31		mg/kg	LMSB056	44/53	0.18 - 0.24	31	NA	39	N			NO	BSL
7440235	Sodium	48	J	1,500	J	mg/kg	LMSB084	36/53	45 - 60	1,500	NA	NA				NO	NUT
	Thallium	2.9	J	9.3	JN	mg/kg	MPSS04	7/53	0.53 - 1.9	9	NA	0.55	N			YES	ASL
7440622	Vanadium	1.3	J	28	J	mg/kg	LMSB091	53/53	NA	28	NA	15**	N			YES	ASL
7440666	Zinc	6.0		5,900		mg/kg	LMSB135	51/53	180 - 330	5,900	NA	2,300	N			YES	ASL
1746016	2,3,7,8-TCDD (TEQ)	0.048	J	67		ng/kg	LMSB092	2/2	NA	67	NA	3.9	C			YES	ASL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
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- C = Carcinogenic
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TABLE 2.2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
LONNIE C. MILLER

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	The Park

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
309002	Aldrin	0.15	J	0.23	J	ug/kg	LMSB318	2/24	1.8 - 25	0.23	NA	29	C			NO	BSL
57749	Alpha-Chlordane /2	0.87	J	68		ug/kg	LMSB051	13/24	2 - 25	68	NA	1,600	C			NO	BSL
319846	Alpha BHC	0.28	J	9.6	J	ug/kg	LMSB313	3/24	1.8 - 25	9.6	NA	90	C			NO	BSL
319857	Beta BHC	6.7	J	6.7	J	ug/kg	LMSB313	1/24	1.8 - 25	6.7	NA	320	C			NO	BSL
	Delta BHC	2.2	J	2.2	J	ug/kg	LMSB088	1/24	1.8 - 25	2.2	NA	320	C			NO	BSL
60571	Dieldrin	0.65	J	72	J	ug/kg	MPSS05	10/24	3.4 - 48	48	NA	30	C			YES	ASL
72208	Endrin	1.1	J	9	J	ug/kg	LMSB088	3/24	3.4 - 48	9	NA	1,800	N			NO	BSL
72208	Endrin Aldehyde	0.58	J	3.6	J	ug/kg	LMSB060	3/24	3.4 - 48	3.6	NA	1,800	N			NO	BSL
58899	Gamma BHC	0.085	J	2	J	ug/kg	LMSB313	2/24	1.8 - 25	2	NA	440	C			NO	BSL
57749	Gamma-Chlordane	0.84	J	61.5		ug/kg	LMSB051	13/24	2- 25	61.5	NA	1,600	C			NO	BSL
1024573	Heptachlor Epoxide	0.57	J	2.4	J	ug/kg	LMSB051	2/24	1.8 - 25	2.4	NA	53	C			NO	BSL
72548	p,p'-DDD	2.1	J	48		ug/kg	LMSB081	12/24	3.8 - 48	48	NA	2,400	C			NO	BSL
72559	p,p'-DDE	2	J	55		ug/kg	LMSB081	11/24	3.5 - 48	55	NA	1,700	C			NO	BSL
50293	p,p'-DDT	1.2	J	472		ug/kg	LMSB132	10/24	3.5 - 48	472	NA	1,700	C			NO	BSL
53469219	PCB-1242 (Arochlor 1242)	75		75		ug/kg	MPSB05	1/24	34 - 480	75	NA	220	C			NO	BSL
12672296	PCB-1248 (Arochlor 1248)	36	J	2550	J	ug/kg	LMSB056	3/24	34 - 440	2250	NA	220	C			YES	ASL
11097691	PCB-1254 (Arochlor 1254)	460	J	2800		ug/kg	MPSB056	3/24	34 - 440	2800	NA	220	C			YES	ASL
11096825	PCB-1260 (Arochlor 1260)	35	J	210	J	ug/kg	LMSB061	6/24	34 - 480	210	NA	220	C			NO	BSL
108883	Toluene	3	J	3	J	ug/kg	MPSB04	1/4	11 - 12	3	NA	59,000	N			NO	BSL
	2-Methylnaphthalene	34	J	50	J	ug/kg	LMSB313	3/23	360 - 2200	50	NA	5,600	N			NO	BSL
106478	4-Chloroaniline	77	J	85	J	ug/kg	LMSB056	2/23	340 - 4400	85	NA	240,000	N			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason: Infrequent Detection but Associated Historically (HIST)
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason: Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: N/A = Not Applicable
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SQL = Sample Quantitation Limit
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C = Carcinogenic
N = Non-Carcinogenic
W = Water
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F = Food

TABLE 2.2 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
LONNIE C. MILLER

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	The Park

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
120127	Anthracene	30	J	200	J	ug/kg	LMSB079	5/23	380 - 2200	200	NA	2,200,000	N			NO	BSL
83329	Acenaphthene	73	J	200	J	ug/kg	LMSB079	2/23	340 - 2200	200	NA	370,000	N			NO	BSL
	Acenaphthylene	27	J	52	J	ug/kg	LMSB313	2/23	360 - 2200	52	NA	1,100,000**	N			NO	BSL
56553	Benzo(a)anthracene	33	J	230	J	ug/kg	LMSB318	3/23	45 - 2200	230	NA	620	C			YES	CPAH
50328	Benzo(a)pyrene	64	J	650		ug/kg	LMSB318	7/19	55.5 - 500	650	NA	62	C			YES	ASL
205992	Benzo(b)fluoranthene	31	J	960		ug/kg	LMSB312	6/20	77.5 - 2200	960	NA	620	C			YES	ASL
	Benzo(g,h,i)perylene	39	J	460		ug/kg	LMSB312	6/23	120 - 220	460	NA	2,300,000**	C			NO	BSL
205992	Benzo(k)fluoranthene	61	J	170	J	ug/kg	LMSB318	3/23	49 - 2200	170	NA	620	C			YES	CPAH
117817	bis(2-ethylhexyl) Phthalate	59	J	1600		ug/kg	MPSB05	12/23	340 - 560	1600	NA	35,000	C			NO	BSL
86748	Carbazole	32	J	110	J	ug/kg	LMSB079	4/23	360 - 2200	110	NA	24,000	C			NO	BSL
218019	Chrysene	26	J	890		ug/kg	LMSB079	7/23	41.5 - 2200	890	NA	62,000	C			YES	CPAH
53703	Dibenz(a,h)anthracene	120	J	120	J	ug/kg	LMSB079	1/24	340 - 2200	120	NA	62	C			YES	ASL
132649	Dibenzofuran	68	J	68	J	ug/kg	LMSB079	1/23	340 - 2200	68	NA	29,000	N			NO	BSL
84742	Di-n-butyl Phthalate	41	J	43	J	ug/kg	LMSB061	2/23	340 - 2200	43	NA	NA				NO	NUT
206440	Fluoranthene	41	J	1300		ug/kg	LMSB079	9/23	410 - 2200	1300	NA	230,000	N			NO	BSL
86737	Fluorene	59	J	130	J	ug/kg	LMSB079	4/23	360 - 2200	130	NA	260,000	N			NO	BSL
103395	Indeno(1,2,3-c,d)pyrene	93	J	430	J	ug/kg	LMSB312	7/23	38 - 2200	430	NA	620	C			YES	CPAH
91203	Naphthalene	34	J	110	J	ug/kg	LMSB079	2/23	360 - 2200	110	NA	5,600	N			NO	BSL
85018	Phenanthrene	25	J	1000		ug/kg	LMSB152	7/23	400 - 2200	1000	NA	2,000,000**	N			NO	BSL
129000	Pyrene	120	J	1600	J	ug/kg	LMSB079	6/23	380 - 2200	1600	NA	230,000	N			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason: Infrequent Detection but Associated Historically (HIST)
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason: Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: N/A = Not Applicable
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TABLE 2.2 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
LONNIE C. MILLER

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	The Park

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
7429905	Aluminum	1,300		26,000		mg/kg	LMSB024	42/42	NA	26,000	NA	7,600	N			YES	ASL
7440360	Antimony	2	J	73		mg/kg	LMSB057	33/42	0.56 - 2	73	NA	3.1	N			YES	ASL
7440382	Arsenic	0.88	J	58		mg/kg	LMSB074	39/42	0.52 - 1.7	58	NA	0.39	C			YES	ASL
7440393	Barium	14	J	1400		mg/kg	LMSB091	42/42	NA	1400	NA	110**	N			YES	ASL
7440417	Beryllium	0.068	J	1.4		mg/kg	LMSB132	26/41	0.067 - 0.6	1.4	NA	15	N			NO	BSL
7440439	Cadmium	0.21	J	100		mg/kg	LMSB060	40/42	0.32 - 0.22	100	NA	3.7	N			YES	ASL
	Calcium	830	J	44,000		mg/kg	MPSB04	42/42	NA	44,000	NA	NA				NO	NUT
18540299	Chromium, Total	6.1	J	370		mg/kg	LMSB036	42/42	NA	370	NA	23	C			YES	ASL
7440484	Cobalt	0.44	J	28	J	mg/kg	LMSB051	42/43	0.22 - 0.22	28	NA	470	N			NO	BSL
7440508	Copper	9.1		5,000		mg/kg	LMSB037	42/42	NA	5,000	NA	110**	N			YES	ASL
57125	Cyanide	0.65	J	7.6	J	mg/kg	LMSB028	21/42	0.53 - 3.3	7.6	NA	1.1	N			YES	ASL
7439896	Iron	2,400	J	290,000	J	mg/kg	LMSB058	41/41	NA	290,000	NA	2,300	N			YES	ASL
7439921	Lead	1.4	J	4,300		mg/kg	LMSB016	126/218	10 - 56	4,300	NA	400	N			YES	ASL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

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Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason: Infrequent Detection (IFD)
Background Levels (BKG)
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n = Presumptive evidence of material
C = Carcinogenic
N = Non-Carcinogenic
W = Water
NF = Nonfood
F = Food

TABLE 2.2 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
LONNIE C. MILLER

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	The Park

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection
7439954	Magnesium	140	J	3,900	J	mg/kg	LMSB152	42/42	NA	6,300	NA	NA				NO	NUT
7439965	Manganese	13		5,700	J	mg/kg	LMSB026	41/41	NA	5,700	NA	180	N			YES	ASL
7439976	Mercury	0.0097	J	5.1	J	mg/kg	LMSB088	40/42	0.05 - 0.2	5.1	NA	2.3	N			YES	ASL
7440020	Nickel	1.8	J	1800		mg/kg	LMSB079	42/42	NA	1800	NA	110**	N			YES	ASL
	Potassium	47	J	1700		mg/kg	LMSB026	42/42	NA	1700	NA	NA				NO	NUT
	Selenium	0.81	J	19		mg/kg	LMSB060	12/42	0.44 - 2.9	19	NA	39	N			NO	BSL
7440224	Silver	0.27	J	23		mg/kg	LMSB059	36/42	0.21 - 1	23	NA	39	N			NO	BSL
7440235	Sodium	61	J	3700		mg/kg	LMSB026	37/42	51 - 210	3700	NA	NA				NO	NUT
	Thallium	0.78	J	12	J	mg/kg	MPSB05	8/42	0.59 - 4	12	NA	0.55	N			YES	ASL
7440622	Vanadium	3.8	J	49	J	mg/kg	LMSB017	42/42	NA	49	NA	15**	N			YES	ASL
7440666	Zinc	76.0		4,100	J	mg/kg	LMSB135	41/41	NA	4100	NA	2,300	N			YES	ASL
1746016	2,3,7,8-TCDD (TEQ)	39		93		ng/kg	LMSB051	3/3	NA	93	NA	3.9	C			YES	ASL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason: Infrequent Detection but Associated Historically (HIST)
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason: Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: N/A = Not Applicable
ND = Not Detected
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
J = Estimated Value
n = Presumptive evidence of material
C = Carcinogenic
N = Non-Carcinogenic
W = Water
NF = Nonfood
F = Food

TABLE 2.3
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
LONNIE C. MILLER

Scenario Timeframe:	Future
Medium:	Sediment
Exposure Medium:	Sediment
Exposure Point:	The Park

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
57749	Alpha-Chlordane /2	1.1	J	1.8	J	ug/kg	LMSW010	3/4	1.1-5.1	1.8	NA	1,600	C			NO	BSL
57749	Gamma-Chlordane	0.76	J	2	J	ug/kg	LMSW010	2/4	0.76-5.4	2	NA	1,600	C			NO	BSL
72559	p,p'-DDE	0.37	J	7.1	J	ug/kg	LMSW008	4/4	0.37-7.1	7.1	NA	1,700	C			NO	BSL
50293	p,p'-DDT	2.8	J	34	J	ug/kg	LMSW008	2/4	2.8-34	34	NA	1,700	C			NO	BSL
1.1E+007	PCB-1260 (Arochlor 1260)	37	J	410	J	ug/kg	LMSW008	3/4	37-410	410	NA	220	C			YES	ASL
56553	Benzo(a)anthracene	35	J	35	J	ug/kg	LMSW008	1/4	35-35	35	NA	620	C			NO	BSL
117817	bis(2-ethylhexyl) Phthalate	73	J	2800	J	ug/kg	LMSW004	4/4	73-2800	2800	NA	35,000	C			NO	BSL
218019	Chrysene	38	J	38	J	ug/kg	LMSW008	1/4	38--38	38	NA	62,000	C			NO	BSL
85018	Phenanthrene	29	J	29	J	ug/kg	LMSW008	1/4	29-29	29	NA	2,000,000**	N			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food

TABLE 2.3 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
LONNIE C. MILLER

Scenario Timeframe:	Future
Medium:	Sediment
Exposure Medium:	Sediment
Exposure Point:	The Park

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7429905	Aluminum	1,400		3,300		mg/kg	LMSW008	4/4	NA	3,300	NA	7,600	N			NO	BSL
7440360	Antimony	1.2	J	18	J	mg/kg	LMSW008	4/4	NA	18	NA	3.1	N			YES	ASL
7440382	Arsenic	2.7		12		mg/kg	LMSW008	4/4	NA	12	NA	0.39	C			YES	ASL
7440393	Barium	52	J	240		mg/kg	LMSW008	4/4	NA	240	NA	110**	N			YES	ASL
7440417	Beryllium	0.077	J	0.092	J	mg/kg	LMSW008	2/4	0.063-0.092	0.092	NA	15	N			NO	BSL
7440439	Cadmium	1	J	2.9	J	mg/kg	LMSW004	4/4	NA	2.9	NA	3.7	N			NO	BSL
	Calcium	2,500		12,000		mg/kg	LMSW001	4/4	NA	12,000	NA	NA				NO	NUT
18540299	Chromium, Total	38		61		mg/kg	LMSW005	4/4	NA	61	NA	23	C			YES	ASL
7440484	Cobalt	0.91	J	5.3	J	mg/kg	LMSW004	4/4	NA	5.3	NA	470	N			NO	BSL
7440508	Copper	220		500		mg/kg	LMSW005	4/4	NA	500	NA	110**	N			YES	ASL
7439896	Iron	4,500		84,000		mg/kg	LMSW004	4/4	NA	84,000	NA	2,300	N			YES	ASL
7439921	Lead	91.0		600		mg/kg	LMSW008	4/4	NA	600	NA	400	N			YES	ASL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, *residential values equal* to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason: Infrequent Detection but Associated Historically (HIST)
Frequent Detection (FD)
Toxicity Information Available (TX)
Above Screening Levels (ASL)
Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason: Infrequent Detection (IFD)
Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: *N/A = Not Applicable*
ND = Not Detected
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
J = Estimated Value
n = Presumptive evidence of material
C = Carcinogenic
N = Non-Carcinogenic
W = Water
NF = Nonfood
F = Food

TABLE 2.3 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
LONNIE C. MILLER

Scenario Timeframe:	Future
Medium:	Sediment
Exposure Medium:	Sediment
Exposure Point:	The Park

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7439954	Magnesium	180	J	670	J	mg/kg	LMSW008	4/4	NA	670	NA	NA				NO	NUT
7439965	Manganese	33	J	280	J	mg/kg	LMSW004	4/4	NA	280	NA	180	N			YES	ASL
7439976	Mercury	0.1	J	0.45	J	mg/kg	LMSW008	4/4	NA	0.45	NA	2.3	N			NO	BSL
7440020	Nickel	10		52		mg/kg	LMSW004	4/4	NA	52	NA	110**	N			NO	BSL
	Potassium	100	J	180	J	mg/kg	LMSW008	4/4	NA	180	NA	NA				NO	NUT
	Selenium	1.6		1.6		mg/kg	LMSW008	1/4	0.48-0.67	1.6	NA	39	N			NO	BSL
7440224	Silver	0.93	J	3.4	J	mg/kg	LMSW008	4/4	NA	3.4	NA	39	N			NO	BSL
7440235	Sodium	300	J	300	J	mg/kg	LMSW008	1/4	54-150	300	NA	NA				NO	NUT
7440622	Vanadium	3.2	J	6.9	J	mg/kg	LMSW008	4/4	NA	6.9	NA	15**	N			NO	BSL
7440666	Zinc	290	J	750	J	mg/kg	LMSW001	4/4	NA	750	NA	2,300	N			NO	BSL

**The Florida Soil Cleanup Target Level (SCTL) was used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, residential values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- W = Water
- NF = Nonfood
- F = Food

TABLE 2.4
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
LONNIE C. MILLER

Scenario Timeframe:	Current/Future
Medium:	Surface Water
Exposure Medium:	Surface Water
Exposure Point:	Unnamed Tributary

CAS Number	Chemical	Minimum Concentration (1)	Minimum Qualifier	Maximum Concentration (1)	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value (2)	Screening Toxicity Value (3)		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection (4)
75092	Methylene Chloride	2.5	J	2.5	J	ug/L	LMSW009	1/4	10	2.5	NA	4.7	C			NO	BSL
56553	Benzo(a)anthracene	0.62	J	0.97	J	ug/L	LMSW007	2/11	10	0.97	NA	0.0044	C			YES	ASL
50328	Benzo(a)pyrene	0.56	J	0.95	J	ug/L	LMSW007	2/11	10	0.95	NA	0.0044	C			YES	ASL
205992	Benzo(b)fluoranthene	1.3	J	1.3	J	ug/L	LMSW007	1/11	10	1.3	NA	0.0044	C			YES	ASL
205992	Benzo(k)fluoranthene	1.3	J	1.3	J	ug/L	LMSW007	1/11	10	1.3	NA	0.0044	C			YES	ASL
85687	Benzyl Butyl Phthalate	0.69	J	0.69	J	ug/L	LMSW007	1/11	10	0.69	NA	3,000	C			NO	BSL
117817	bis(2-ethylhexyl)phthalate	1.6	J	1.6	J	ug/L	LMSW015	1/11	2.1 - 10	1.6	NA	1.8	C			NO	BSL
218019	Chrysene	0.61	J	1.1	J	ug/L	LMSW007	2/11	10	1.1	NA	0.0044	C			YES	ASL
84742	Di-n-Butyl Phthalate	0.36	J	0.36	J	ug/L	LMSW009	1/11	10	0.36	NA	2,700	N			NO	BSL
117840	Di-n-Octylphthalate	1.8	J	1.8	J	ug/L	LMSW007	2/11	10	1.8	NA	NE	N			YES	TX
206440	Fluoranthene	0.73	J	0.76	J	ug/L	LMSW024	2/11	10	0.76	NA	300	N			NO	BSL

*The Florida Surface Water Target Levels were used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) U.S. EPA National Recommended Water Quality Criteria-Correction April 1999, human health: for consumption of water and organism values

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

(6) Screening value for endrin used.

(7) Screening value for Pyrene was used

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- NE = Not Established
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic

TABLE 2.4 (Continued)
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITE
LONNIE C. MILLER

Scenario Timeframe:	Current/Future
Medium:	Surface Water
Exposure Medium:	Surface Water
Exposure Point:	Unnamed Tributary

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
7429905	Aluminum	0.28		5.85		ug/L	LMSW012	8/11	0.07 - 0.2	5.85	NA	13*	N			NO	BSL
7440382	Arsenic	0.0109	J	0.03		ug/L	LMSW010	2/11	0.0032 - 0.00495	0.03	NA	0.018	C			YES	ASL
7440393	Barium	0.024	J	1.1		ug/L	LMSW010	11/11	NA	1.1	NA	NE	N			YES	TX
7440439	Cadmium	0.0039	J	0.0048	J	ug/L	LMSW010	2/11	0.00071	0.0048	NA	NE	N			YES	TX
	Calcium	56		170		ug/L	LMSW014	11/11	NA	170	NA	NE				NO	NUT
18540299	Chromium, Total	0.0175		0.045		ug/L	LMSW010	2/11	0.0017 - 0.00355	0.045	NA	NE	C			YES	TX
7440484	Cobalt	0.0019	J	0.0019	J	ug/L	LMSW010	1/11	0.0014	0.0019	NA	NE	N			YES	TX
7440508	Copper	0.0026	J	0.29		ug/L	LMSW010	4/11	0.0013 - 0.0053	0.29	NA	1,300	N			NO	BSL
57125	Cyanide	0.0057	J	0.015		ug/L	LMSW015	2/11	0.005 - 0.012	0.015	NA	700	N			NO	BSL
7439896	Iron	0.35		160		ug/L	LMSW010	11/11	NA	160	NA	300	N			NO	BSL
7439921	Lead	0.0018	J	0.3		ug/L	LMSW010	5/11	0.0015 - 0.0056	0.3	NA	0.015	N			YES	ASL
7439954	Magnesium	9		340		ug/L	LMSW013	11/11	NA	340	NA	NE	N			NO	NUT
7439965	Manganese	0.110		0.70		ug/L	LMSW012	9/11	0.0074 - 0.0097	0.70	NA	50	N			NO	BSL
7439976	Mercury	0.000265		0.00044		ug/L	LMSW010	2/11	0.000072	0.00044	NA	0.050	N			NO	BSL
7440020	Nickel	0.0125	J	0.022	J	ug/L	LMSW010	2/11	0.0047	0.022	NA	610	N			NO	BSL
	Potassium	1.6	J	130		ug/L	LMSW013	11/11	NA	130	NA	NE	N			NO	NUT
7440224	Silver	0.0022	J	0.0032	J	ug/L	LMSW010	2/11	0.0019	0.0032	NA	NE	N			YES	TX
7440235	Sodium	11		2,700		ug/L	LMSW013	11/11	NA	2,700	NA	NE				NO	NUT
7440622	Vanadium	0.0033	J	0.024	J	ug/L	LMSW010	5/11	0.0022 - 0.004	0.024	NA	NE	N			YES	TX
7440666	Zinc	0.0065	J	0.78		ug/L	LMSW010	7/11	0.0059 - 0.024	0.78	NA	9,100	N			NO	BSL

*The Florida Surface Water Target Levels were used.

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) U.S. EPA National Recommended Water Quality Criteria-Correction April 1999, human health for consumption of water and organism values

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

(6) Screening value for endrin used.

(7) Screening value for pyrene used.

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- NE = Not Established
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic

TABLE 2.5
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN
JACKSONVILLE ASH SITES
LONNIE C. MILLER

Scenario Timeframe:	Future
Medium:	Groundwater
Exposure Medium:	Groundwater
Exposure Point:	Surficial Aquifer

CAS Number	Chemical	(1) Minimum Concentration	Minimum Qualifier	(1) Maximum Concentration	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	(2) Background Value	(3) Screening Toxicity Value		Potential ARAR/ TBC Value	Potential ARAR/ TBC Source	COPC Flag	(4) Rationale for Contaminant Deletion or Selection
115297	Alpha endosulfan	0.013	J	0.013	J	ug/L	LMMW007	1/6	0.05	0.013	NA	22	N			NO	BSL
76131	1,1,2-Trichloro-1,2,2-Trifluoroethane	0.32	J	0.32	J	ug/L	LMMW002	1/6	10	0.32	NA	5,900	N			NO	BSL
156592	cis-1,2-Dichloroethylene	16		16		ug/L	LMMW005	1/6	10	16	NA	6.1	N			YES	ASL
75014	Vinyl Chloride	0.54	J	0.54	J	ug/L	LMMW005	1/6	10	0.54	NA	0.02	C			YES	ASL
	Cresols, M&P	75		75		ug/L	LMMW007	1/6	10	75	NA	18	N			YES	ASL
108952	Phenol	17		17		ug/L	LMMW007	1/6	10	17	NA	2,200	N			NO	BSL
7429905	Aluminum	0.75		0.75		mg/L	LMMW001	1/6	0.27	0.75	0.02	3.6	N			NO	BSL
7440393	Barium	0.017	J	0.13	J	mg/L	LMMW004	6/6	NA	0.13	0.03	0.26	N			NO	BSL
7440439	Cadmium	0.0034	J	0.0034	J	mg/L	LMMW004	1/6	0.00071	0.0034	ND	0.0018	N			YES	ASL
	Calcium	1.5	J	84		mg/L	LMMW004	6/6	NA	84	5.2	NA				NO	NUT
7440484	Cobalt	0.0028	J	0.0028	J	mg/L	LMMW004	1/6	0.0014	0.0028	ND	0.22	N			NO	BSL
7439896	Iron	0.35		1.2		mg/L	LMMW004	6/6	NA	1.2	3.9	1.1	N			NO	BKG
7439921	Lead	0.0019	J	0.0028		mg/L	LMMW005	3/6	0.0015-0.88	0.0028	6.9	0.015	N			NO	BSL
7439954	Manganese	0.05		0.16		mg/L	LMMW003	5/6	0.0052	0.16	0.013	0.088	N			YES	ASL
7439965	Magnesium	0.082		12		mg/L	LMMW04/05	6/6	NA	12	1.3	NA				NO	NUT
7440020	Nickel	0.0058	J	0.0058	J	mg/L	LMMW004	1/6	0.0047	0.0058	ND	0.073	N			NO	BSL
	Potassium	0.65	J	8.4		mg/L	LMMW004	6/6	NA	8.4	0.86	NA				NO	NUT
7440235	Sodium	4	J	47		mg/L	LMMW004	6/6	NA	47	7.4	NA				NO	NUT

(1) Minimum/maximum detected concentration.

(2) Background concentrations are not being used for this evaluation.

(3) Region 9 Preliminary Remediation Goals (PRGs) November 2000, tap water values equal to a carcinogenic risk of 10-6 or a hazard quotient of 0.1.

(4) EPA Region IV does not use comparisons to ARAR/TBC value to screen COPCs. However, potential ARAR/TBC values are presented in the remedial goal option section, as appropriate.

(5) Rationale Codes Selection Reason:
- Infrequent Detection but Associated Historically (HIST)
- Frequent Detection (FD)
- Toxicity Information Available (TX)
- Above Screening Levels (ASL)
- Carcinogenic PAHs evaluated as a group (CPAH)

Deletion Reason:
- Infrequent Detection (IFD)
- Background Levels (BKG)
- No Toxicity Information (NTX)
- Essential Nutrient (NUT)
- Below Screening Level (BSL)

Definitions:
- N/A = Not Applicable
- ND = Not Detected
- NE = Not Established
- SQL = Sample Quantitation Limit
- COPC = Chemical of Potential Concern
- ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered
- J = Estimated Value
- n = Presumptive evidence of material
- C = Carcinogenic
- N = Non-Carcinogenic
- NF = Nonfood

Appendix D

Medium-Specific Exposure Point Concentration Summary
(Tables 3.1 thru 3.10 from BHHRA)

TABLE 3.1
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
JACKSONVILLE ASH SITES
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	Forest Street Site Proper (Area 1)

Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL of Log Normal Data (2)	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency (3)		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Benzo(a)anthracene	ug/kg	354	485	720		mg/kg	0.0485	95 % UCL	95 % UCL			
Benzo(a)pyrene	ug/kg	332	470	680		mg/kg	0.470	95 % UCL	95 % UCL			
Benzo(b)fluoranthene	ug/kg	397	NC	820		mg/kg	0.082	MAX	MAX			
Benzo(b and/or k)fluoranthene*	ug/kg	547	1,451	1,800	J	mg/kg	0.145	95 % UCL	95 % UCL			
Benzo(k)fluoranthene	ug/kg	488	NC	720		mg/kg	0.0072	MAX	MAX			
Chrysene	ug/kg	283	502	780	J	mg/kg	0.000502	95 % UCL	95 % UCL			
Indeno(1,2,3-cd)pyrene	ug/kg	133	306	340	J	mg/kg	0.0306	95 % UCL	95 % UCL			
CPAH (TEF)	ug/kg	NA	NA	NA		mg/kg	0.784	NA	NA			
PCB-1260	ug/kg	269	353	1,900		mg/kg	0.353	MAX	MAX			
2,3,7,8-TCDD (TEQ)	ng/kg	23.2	60.7	200		mg/kg	0.0000607	95 % UCL	95 % UCL			
Aluminum	mg/kg	3,812	6,073	28,000		mg/kg	6,073	95 % UCL	95 % UCL			
Antimony	mg/kg	20	19.1	36.5		mg/kg	19.1	95 % UCL	95 % UCL			
Arsenic	mg/kg	2.6	5.4	5.7		mg/kg	5.4	95 % UCL	95 % UCL			
Barium	mg/kg	119.0	355	530		mg/kg	355	95 % UCL	95 % UCL			
Cadmium	mg/kg	1.5	4.65	9.4		mg/kg	4.65	95 % UCL	95 % UCL			
Chromium (Total)	mg/kg	11.0	26	74	J	mg/kg	26	95 % UCL	95 % UCL			
Copper	mg/kg	70.4	787	1,800	J	mg/kg	787	95 % UCL	95 % UCL			
Cyanide	mg/kg	1.2	0.43	1.2		mg/kg	0.43	95 % UCL	95 % UCL			
Iron	mg/kg	9,311	28,826	78,000		mg/kg	28,826	95 % UCL	95 % UCL			
Lead	mg/kg	1,400	NC	3,500		mg/kg	1,400	Arith. Mean	Arith. Mean			
Manganese	mg/kg	116	280	720		mg/kg	280	95 % UCL	95 % UCL			
Vanadium	mg/kg	8.11	13	26		mg/kg	13	95 % UCL	95 % UCL			

Statistics: Maximum Detected Value (Max); 95% UCL of Log-transformed Data (95% UCL-T)

NC - Not Calculated. The 95% UCL was not calculated because the data set contained less than 10 samples; therefore, the maximum detected concentration will be used as the EPC.

(1) As an interim procedure, Region IV has adopted a toxicity equivalency factor (TEF) methodology for carcinogenic PAHs based on each compound's relative potency to the potency of benzo(a)pyrene (BAP). The following TEFs were used to convert the concentration of each PAH compound to an equivalent concentration of BAP: Benzo(a)anthracene (0.1), Benzo(a)pyrene (1), Benzo(b)fluoranthene (0.1), Benzo(k)fluoranthene (0.01), Chrysene (0.001), Dibenz(a,h)anthracene (1), and Indeno(1,2,3-cd)pyrene (0.1).

(2) Per EPA Region IV guidance (EPA, 1996a), this column contains the arithmetic average of detected concentrations only.

(3) Per EPA Region IV guidance (EPA, 1996a), it was assumed that the sampling data are log normally distributed.

(4) Per EPA Region IV guidance (EPA, 1996a), the central tendency evaluation will be presented in the risk characterization uncertainty section. Further, a central tendency evaluation will only be performed for scenarios, media, and chemicals of concern.

*The laboratory reported the compound as benzo(b and/or k)fluoranthene; therefore, the highest TEF was used (i.e., benzo(b)fluoranthene).

TABLE 3.2
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
JACKSONVILLE ASH SITES
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	Forest Street Site Proper (Area 1)

Chemical of Potential Concern	Units	Arithmetic Mean (2)	95% UCL of Log Normal Data (3)	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency (4)		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Benzo(a)anthracene	ug/kg	209	NC	340	J	mg/kg	0.034	Max	Max			
Benzo(a)pyrene	ug/kg	239	NC	380	J	mg/kg	0.380	Max	Max			
Benzo(band/or k) fluoranthene*	ug/kg	447	NC	680	J	mg/kg	0.00068	Max	Max			
Chrysene	ug/kg	188	NC	340	J	mg/kg	0.00034	Max	Max			
Dibenzo(a,h)anthracene	ug/kg	40	NC	40	J	mg/kg	0.040	Max	Max			
Indeno(1,2,3-cd)pyrene	ug/kg	122	NC	190	J	mg/kg	0.019	Max	Max			
CPAH TEF(1)	ug/kg	N/A	N/A	N/A		mg/kg	0.474	Max	Max			
2,3,7,8-TCDD (TEQ)	ng/kg	40	N/A	81		mg/kg	0.000081	Max	Max			
Aluminum	mg/kg	663	5,724	8,700		mg/kg	5.724	Max	Max			
Antimony	mg/kg	14	269.39	77	J	mg/kg	77	Max	Max			
Arsenic	mg/kg	44	2,030.58	310	J	mg/kg	310	Max	Max			
Barium	mg/kg	252	247,815	1,500	J	mg/kg	1,500	Max	Max			
Cadmium	mg/kg	1,627	4,045,423	13,000		mg/kg	13,000	Max	Max			
Chromium (Total)	mg/kg	12	36	70	J	mg/kg	36	Max	Max			
Cobalt	mg/kg	69	1,523	530	J	mg/kg	530	Max	Max			
Copper	mg/kg	10,241	113,442,936	71,000		mg/kg	71,000	Max	Max			
Cyanide	mg/kg	0.6	0.83	1.25		mg/kg	0.83	95 % UCL	95 % UCL			
Iron	mg/kg	27,106	552,832	150,000		mg/kg	150,000	Max	Max			
Lead	mg/kg	254	NC	5,310	J	mg/kg	254	Arith. Mean	Arith. Mean			
Manganese	mg/kg	224	3,741	1,800		mg/kg	1,800	Max	Max			
Mercury	mg/kg	2	99.75	13		mg/kg	13	Max	Max			
Nickel	mg/kg	32	615	200	J	mg/kg	200	Max	Max			
Silver	mg/kg	46	18,640	180		mg/kg	180	Max	Max			
Thallium	mg/kg	6.9	5.19	7	J	mg/kg	5.19	95 % UCL	95 % UCL			
Vanadium	mg/kg	256	20,369	2,000		mg/kg	2,000	Max	Max			
Zinc	mg/kg	330	45,128	3,800		mg/kg	3,800	Max	Max			

Statistics: Maximum Detected Value (Max); 95% UCL of Log-transformed Data (95% UCL-T)

NC - Not Calculated. The 95% UCL was not calculated because the data set contained less than 10 samples; therefore, the maximum detected concentration will be used as the EPC.

(1) As an interim procedure, Region IV has adopted a toxicity equivalency factor (TEF) methodology for carcinogenic PAHs based on each compound's relative potency to the potency of benzo(a)pyrene (BAP). The following TEFs were used to convert the concentration of each PAH compound to an equivalent concentration of BAP: Benzo(a)anthracene (0.1), Benzo(a)pyrene (1), Benzo(b)fluoranthene (0.1), Benzo(k)fluoranthene (0.01), Chrysene (0.001), Dibenz(a,h)anthracene (1), and Indeno(1,2,3-cd)pyrene (0.1).

(2) Per EPA Region IV guidance (EPA, 1996a), this column contains the arithmetic average of detected concentrations only.

(3) Per EPA Region IV guidance (EPA, 1996a), it was assumed that the sampling data are log normally distributed.

(4) Per EPA Region IV guidance (EPA, 1996a), the central tendency evaluation will be presented in the risk characterization uncertainty section. Further, a central tendency evaluation will only be performed for scenarios, media, and chemicals of concern.

*The laboratory reported the compound as benzo(b and/or k)fluoranthene; therefore, the highest TEF was used (i.e., benzo(b)fluoranthene).

TABLE 3.3
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
JACKSONVILLE ASH SITES
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	I-10/I-95 Interchange East

Chemical of Potential Concern	Units	Arithmetic Mean (2)	95% UCL of Log Normal Data (3)	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency (4)		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Benzo(a)anthracene	ug/kg	710	NC	710		mg/kg	0.071	Max	Max			
Benzo(a)pyrene	ug/kg	780	NC	780		mg/kg	0.780	Max	Max			
Benzo(b) fluoranthene*	ug/kg	930	NC	930		mg/kg	0.093	Max	Max			
Benzo(k) fluoranthene*	ug/kg	840	NC	840		mg/kg	0.0084	Max	Max			
Chrysene	ug/kg	770	NC	770		mg/kg	0.00077	Max	Max			
Indeno(1,2,3-cd)pyrene	ug/kg	470	NC	470		mg/kg	0.047	Max	Max			
CPAH TEF(1)	ug/kg	N/A	N/A	N/A		mg/kg	1.0	Max	Max			
Arsenic	mg/kg	1.59	1.73	3.1		mg/kg	1.73	95% UCL	95% UCL			
Lead	mg/kg	320	NC	1,013		mg/kg	320	Arith. Mean	Arith. Mean			

Statistics: Maximum Detected Value (Max); 95% UCL of Log-transformed Data (95% UCL-T)

NC - Not Calculated. The 95% UCL was not calculated because the data set contained less than 10 samples; therefore, the maximum detected concentration will be used as the EPC.

(1) As an interim procedure, Region IV has adopted a toxicity equivalency factor (TEF) methodology for carcinogenic PAHs based on each compound's relative potency to the potency of benzo(a)pyrene (BAP). The following TEFs were used to convert the concentration of each PAH compound to an equivalent concentration of BAP: Benzo(a)anthracene (0.1), Benzo(a)pyrene (1), Benzo(b)fluoranthene (0.1), Benzo(k)fluoranthene (0.01), Chrysene (0.001), Dibenz(a,h)anthracene (1), and Indeno(1,2,3-cd)pyrene (0.1).

(2) Per EPA Region IV guidance (EPA, 1996a), this column contains the arithmetic average of detected concentrations only.

(3) Per EPA Region IV guidance (EPA, 1996a), it was assumed that the sampling data are log normally distributed.

(4) Per EPA Region IV guidance (EPA, 1996a), the central tendency evaluation will be presented in the risk characterization uncertainty section. Further, a central tendency evaluation will only be performed for scenarios, media, and chemicals of concern.

*The laboratory reported the compound as benzo(b and/or k)fluoranthene; therefore, the highest TEF was used (i.e., benzo(b)fluoranthene).

TABLE 3.4
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
JACKSONVILLE ASH SITES
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	I-10/I-95 Interchange East

Chemical of Potential Concern	Units	Arithmetic Mean(1)	95% UCL of Log Normal Data(2)	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency (3)		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	mg/kg	6.8	NC	6.8		mg/kg	6.8	Max	Max			
Lead	mg/kg	140	NC	1,030		mg/kg	140	Arith. Mean	Arith. Mean			

Statistics: Maximum Detected Value (Max); 95% UCL of Log-transformed Data (95% UCL-T)

NC - Not Calculated. The 95% UCL was not calculated because the data set contained less than 10 samples; therefore, the maximum detected concentration will be used as the EPC.

(1) Per EPA Region IV guidance (EPA, 1996a), this column contains the arithmetic average of detected concentrations only.

(2) Per EPA Region IV guidance (EPA, 1996a), it was assumed that the sampling data are log normally distributed.

(3) Per EPA Region IV guidance (EPA, 1996a), the central tendency evaluation will be presented in the risk characterization uncertainty section. Further, a central tendency evaluation will only be performed for scenarios, media, and chemicals of concern.

TABLE 3.5
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
JACKSONVILLE ASH SITES
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Surface Soil
Exposure Medium:	Surface Soil
Exposure Point:	I-10/I-95 Interchange West

Chemical of Potential Concern	Units	Arithmetic Mean(1)	95% UCL of Log Normal Data(2)	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency (3)		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	mg/kg	5.7	NC	9.3		mg/kg	9.3	Max	Max			
Cyanide	mg/kg	16	NC	16		mg/kg	16	Max	Max			
Lead	mg/kg	319	NC	1,010		mg/kg	319	Arith. Mean	Arith. Mean			

For non-detects, 1/2 sample quantitation limit was used as a proxy concentration; for duplicate sample results, the average value was used in the calculation.

Statistics: Maximum Detected Value (Max); 95% UCL of Log-transformed Data (95% UCL-T)

NC - Not Calculated. The 95% UCL was not calculated because the data set contained less than 10 samples; therefore, the maximum detected concentration will be used as the EPC.

(1) Per EPA Region IV guidance (EPA, 1996a), this column contains the arithmetic average of detected concentrations only.

(2) Per EPA Region IV guidance (EPA, 1996a), it was assumed that the sampling data are log normally distributed.

(3) Per EPA Region IV guidance (EPA, 1996a), the central tendency evaluation will be presented in the risk characterization uncertainty section. Further, a central tendency evaluation will only be performed for scenarios, media, and chemicals of concern.

TABLE 3.6
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY
JACKSONVILLE ASH SITES
FOREST STREET INCINERATOR

Scenario Timeframe:	Future
Medium:	Subsurface Soil
Exposure Medium:	Subsurface Soil
Exposure Point:	I-10/I-95 Interchange West

Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL of Log Normal Data (2)	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency (3)		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Arsenic	mg/kg	7.06	NC	13		mg/kg	13	Max	Max			
Iron	mg/kg	41,900	NC	180,000		mg/kg	180,000	Max	Max			
Lead	mg/kg	384	NC	1,480		mg/kg	384	Arith. Mean	Arith. Mean			

Statistics: Maximum Detected Value (Max); 95% UCL of Log-transformed Data (95% UCL-T)

NC - Not Calculated. The 95% UCL was not calculated because the data set contained less than 10 samples; therefore, the maximum detected concentration will be used as the EPC.

(1) Per EPA Region IV guidance (EPA, 1996a), this column contains the arithmetic average of detected concentrations only.

(2) Per EPA Region IV guidance (EPA, 1996a), it was assumed that the sampling data are log normally distributed.

(3) Per EPA Region IV guidance (EPA, 1996a), the central tendency evaluation will be presented in the risk characterization uncertainty section. Further, a central tendency evaluation will only be performed for scenarios, media, and chemicals of concern.